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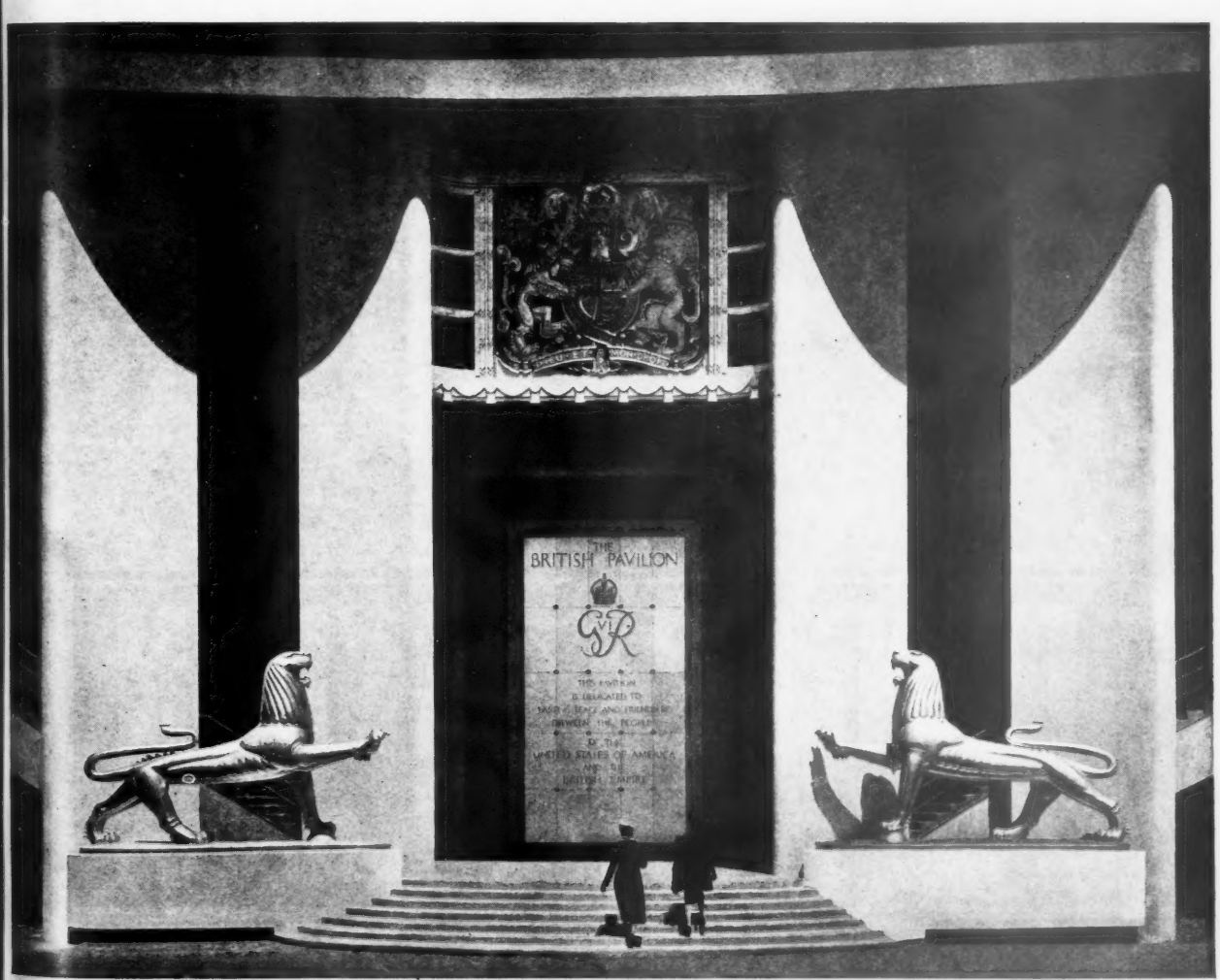

Entrance of the British Pavilion, the New York World's Fair 1939. *Howard Robertson (Stanley Hall, Easton and Robertson), Royal Gold Medallist* 1949

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THE JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

THIRD SERIES VOL 56 NUMBER 5 : MARCH 1949 : 66 PORTLAND PLACE LONDON W1 : TWO SHILLINGS & SIXPENCE

193 EDITORIAL

195 MANNERISM IN ARCHITECTURE—ANTHONY BLUNT

201 THE R.I.B.A. QUESTIONNAIRE

202 INDUSTRIAL ARCHITECTURE—CONFERENCE AND EXHIBITION AT THE R.I.B.A.

208 THE TOWN AND COUNTRY PLANNING ACT—SIR THOMAS SHEEPSHANKS

214 THE USE OF STEEL IN BUILDING

215 THE WORK OF THE ROYAL GOLD MEDALLIST FOR 1949

220 FORCE AND FORM. THE ÆSTHETICS OF STRESS DISTRIBUTION—F. J. SAMUELY

226 CRAWLEY NEW TOWN—THE MASTER PLAN

232 PRACTICE NOTES

233 CORRESPONDENCE

236 BOOK REVIEWS

238 REVIEW OF CONSTRUCTION AND MATERIALS

239 NOTES AND NOTICES

243 OBITUARIES

244 NOTES FROM THE MINUTES OF THE COUNCIL

245 MEMBERSHIP LISTS

247 REVIEW OF FILMS—9

247 MEMBERS' COLUMN

The Royal Gold Medal

On behalf of His Majesty the King, the President will present the Royal Gold Medal to Mr. Howard Robertson, S.A.D.G. [*F*], on Tuesday 5 April at 6 p.m. Mr. Robertson's many friends and admirers will doubtless wish to be present at the R.I.B.A. on this occasion to do him honour. On the cover and elsewhere in this JOURNAL we have published a selection of those works by his firm which Mr. Robertson has personally designed. They are selected as examples covering his whole career as a practising architect, the dates being given in each case. The Royal Gold Medal is also awarded in recognition of his work as a teacher of architecture. He served as Principal of the Architectural Association School of Architecture from 1920 to 1929, when Mr. Robert Atkinson was Director of Education, and as Director from 1929 to 1935.

The R.I.B.A. Reception

Members are reminded that the Royal Institute's Reception will be held on Friday 29 April. The President and Mrs. Waterhouse will receive members and guests from 8.15 to 9 p.m., and there will be dancing from 9 p.m. until midnight. There will be an exhibition in the Library of drawings by Englishmen of subjects abroad. Tickets are 15s. each. Further particulars will be found on page 240.

Scale of Architects' Fees for State-Aided Housing Schemes

At their meeting on 8 February 1949 the R.I.B.A. Council resolved that on and after 1 January 1949 and until further notice, the existing Scale of Fees dated 19 June 1945 shall be subject to a surcharge of 20 per cent.

This adjustment is not applicable in respect of schemes for which the scale of fees has already been fixed by any agreement entered into between 1 January 1949 and the date of publication of this notice. It has been ascertained that the Ministry of Health will raise no objection on loan sanction for this increased charge of fees.

Basildon Development Corporation

Sir Lancelot Keay, K.B.E., Immediate Past President, R.I.B.A., lately City Architect and Director of Housing, Liverpool, has been appointed Chairman of the Development Corporation for the new town of Basildon.

The Royal Fine Art Commission

In its Eighth Report (1946-47) the Royal Fine Art Commission shows that it has taken full advantage of its recent extension of powers. It has dealt with a large number of amenity questions, mainly architectural. On the subject of prefabricated permanent housing, the report says that while the general standard of design of these houses is improving, the layouts of many housing schemes in which they are used leave much to be desired. The Commissioners say: 'We urge once again that the Ministries concerned should give clear and definite instruction to those directly responsible for housing projects that only fully qualified architects and planners should be employed on the work of planning and development.'

On the Bankside Power Station the Commissioners offered no observations on the design itself, which they considered eminently suitable for the site selected, but informed the Ministry of Town and Country Planning that 'Though the Commission had not been approached in the matter, this in no way altered its views on the site which they considered inappropriate for an industrial building of this kind. Its use for such a purpose struck at the root of good town planning and zoning principles'.

On power stations in general, the Commissioners pointed out that these included massive cooling towers, chimneys and extensive coal handling plant, which distracted attention from the principal building. They considered elaborate architectural treatment of the main building to be inadvisable and would welcome a simple functional treatment.

The work of the Commissioners has included the problem of street furniture design (which they say is not yet being tackled effectively), St. Paul's Cathedral Reredos (they approved the scheme recently illustrated in the JOURNAL), the large extension of the Gas Works at Oxford (which they oppose on the proposed site), the Severn Bridge (preliminary designs were tentatively approved), the proposed passenger and cargo terminal at Southampton (recommendations were made), the House of Commons rebuilding, King's Cross Station, Coventry Cathedral, the Crystal Palace, and other architectural designs and problems of amenity.

Mr. Raymond McGrath elected A.R.H.A.

Mr. Raymond McGrath, B.Arch. (Sydney) [*F*], Principal Architect to the Office of Public Works, Dublin, has been elected an Associate of the Royal Hibernian Academy.

British Architects' Conference 1949—Welcome to Nottingham

The 1949 British Architects' Conference is being held from 29 June to 2 July at Nottingham. The Nottingham, Derby and Lincoln Architectural Society have organized a full and interesting programme which already makes the Conference an assured success. The titles of the papers have not yet been finally settled, but will be on Housing, one to be given by Mr. T. Cecil Howitt, D.S.O. [*F*], and one by Mr. J. H. Forshaw, M.C., M.A. [*F*], Chief Architect and Housing Consultant to the Ministry of Health.

Conference Headquarters will be at the Y.M.C.A., Shakespeare Street. Members arrive at Nottingham on Wednesday 29 June. In the evening they will be the guests of the Nottingham, Derby and Lincoln Architectural Society at an Informal Reception at the Victoria Station Hotel, the Inaugural Meeting being on Thursday morning 30 June, followed by a paper. In the afternoon of that day there will be a Garden Party at Wollaton Hall, followed by a Civic Reception in the evening at Nottingham Castle, the city's ancient fortress.

After the paper to be read on Friday morning 1 July, there will be alternative half-day tours with for others more socially inclined alternative whole day tours on that day to Lincoln and Haddon Hall (the Elizabethan mansion on the banks of the Wye in South Derbyshire). Following the day's events, the Conference Dinner will be held at Nottingham University. The dress rule for the Civic Reception and Dinner functions will be evening dress or dinner jacket. On Saturday 2 July, alternative morning visits either to Nottingham local civic buildings, Newstead Abbey, or to local housing estates, will be arranged.

Though Nottingham has spread and has become one of the principal manufacturing towns of the North Midlands, it has not entirely lost its ancient character. British fortress, Roman Station, Saxon Town, Danish burgh, a citadel of Edward the Elder and an important fortress of the Normans, Nottingham has a history of which it may justly be proud. Caves are pointed out where dwelt the first race of men who inhabited this spot, and it is strange that these self-same caves which sheltered the earliest warriors of Britain continued to serve as habitations into the Middle Ages. Then there is the great open market-place, the scene of the famous goose-fair and the ancient churches of St. Mary and St. Peter.

Altogether it is a city of great interest, in which the mediæval is found side by side with the modern and industry rubs shoulders with antiquity. Nottingham is, however, aware of its responsibilities as a modern town, and has a good architectural programme of housing and civic development.

The programme and application forms will be enclosed with the April JOURNAL. Please send your application form to the R.I.B.A. at the earliest possible moment as hotel accommodation is limited. The closing date for Conference applications is Saturday 4 June.

The Cubing of Buildings

A code for the cubing of buildings to be used in respect of development charges under the Town and Country Planning Act has been jointly prepared by the R.I.B.A. and the Royal Institution of Chartered Surveyors. This has been accepted by the Central Land Board, whose published document under the heading *Code for Cubing Buildings*, is published for reference on page 240 of this JOURNAL. It is also discussed by Mr. Charles Woodward in *Practice Notes* on page 232.

Members will recollect that this question was raised in the discussion on Sir Malcolm Trustram Eve's recent paper at the R.I.B.A., when he said it would be desirable to get some agreed definition. The method of cubing in the Board's document applies, of course, only to development charges. For approximate estimates of cost it does not supersede the accepted methods.

Architectural Education

The Ministry of Education is to hold a short Course for Teacher's in schools of architecture at the R.I.B.A. on 8 and 9 April. Although called a 'course', it will include discussions and the programme indicates that some of these may be lively. The course is open only to representatives of schools.

The first (morning) session includes addresses by the President, and by Mr. F. Bray, Under Secretary for Further Education, and a lecture by Mr. C. A. Richardson, Chief Inspector, on *The Educational Aspect*. In the second (afternoon) session Mr. G. D. Gordon Hake [*F*], Principal of the R.W.A. School of Architecture will lecture on *The Teaching of Theory and History of Architecture* and Professor Gordon Stephenson [*F*] of the Department of Civic Design, University of Liverpool, on *The Impact of Town Planning Legislation upon the Work of the Architect*.

On the second day Mr. A. Douglas Jones [*F*], Director of the School of Architecture, Birmingham, will lecture on *Sketching, Measured Drawings and Local Studies*, Mr. Frank Chippindale [*F*], Head of the School of Architecture and Building, Leicester, on *Practical Instruction on Building Operations*, Professor H. O. Corfiato [*F*], the Bartlett School of Architecture, University of London, on *Study of the Orders: Method and Place in the Curriculum*, and Mr. C. G. Bath [*A*], of the Northern Polytechnic, on *The Use by Students of Available Information on Scientific Developments in Building Technique and Materials*. The programme will conclude with lectures by Professor Basil R. Ward [*F*] of the Royal College of Art on *Explaining Architecture to Students of the Other Arts: A Modern Need*, and by Mr. Hugh Casson [*F*] on *Exhibitions and Architecture*.

We hope to publish a condensed account of the course in the May JOURNAL.

Penshurst Place

In opening Penshurst Place in Kent, to the public, Lord De l'Isle and Dudley has instituted a 'connoisseurs day' on the first Friday in each month from May to October. This reservation of a day for those who wish to study seriously the architecture and furniture of an historic building is an excellent idea and one that might well be copied. Every architect knows how irksome it is to be hustled along with a crowd of sightseers when one wants to browse over a detail or make a sketch. A leaflet has been prepared giving particulars of train, 'bus and taxi services and of local catering facilities and can be obtained from the Secretary, Penshurst Place, near Tonbridge. A charge is made for admission, that for connoisseurs day being 5*s*.

Sir Percy Thomas appointed Sheriff for Glamorgan

Sir Percy E. Thomas, O.B.E., Hon.LL.D. (Wales), D.L., J.P., M.T.P.I., Past-President R.I.B.A., has been appointed Sheriff for Glamorgan. This ceremony was carried out at a Privy Council meeting on 4 March.

Colonel Stanley Howe Fisher, M.C., T.D. [*F*], has been appointed a Deputy Lieutenant for the County of London (*London Gazette*, 1 March).

The Lutyens Memorial

The work of compiling the Lutyens Memorial Volumes has necessarily taken a long time. The Memorial Committee would like subscribers to know that this work is now complete and the volumes are in course of production.

R.I.B.A. Diary

TUESDAY 5 APRIL 6 P.M. Presentation of the Royal Gold Medal.
TUESDAY 12 APRIL 6 P.M. A.S.B. Lecture. *Microclimatology—Local Variations of Climate as they affect the design and siting of Buildings*. G. Manley, M.A., M.Sc.
FRIDAY 29 APRIL 8.15 P.M. TO MIDNIGHT. The R.I.B.A. Annual Reception.

Mannerism in Architecture

By Professor Anthony Blunt, C.V.O.

Read before the Royal Institute of British Architects, 22 February 1949
The President in the Chair

Professor Anthony Blunt: I must begin, I am afraid, by defining the title of my lecture, particularly because owing to the exigencies of printing, it is impossible to indicate in the printed title that the word 'Mannerism' should be spelt with a capital 'M' and not with a small 'M'. That is to say, I am not going to give a lecture on affectation in architecture, although I think that would probably be an amusing theme, but I want to do something quite different, namely, to try and define a particular style in architecture, a style which we call 'Mannerism', which existed and was practised in a particular place for a particular period. It is true that the word is also used in a rather more general sense, that is to say, there are other places and other times where the same characteristics of style are found, and then we quite properly, I think, apply the word 'Mannerist'—with qualifications—to those other works of architecture produced in those other times and places.

The origin of the word 'Mannerism' is roughly as follows. At the end of the 19th century art history was an admirably simple affair which moved in a series of grandiose sweeps up and down, reaching a climax and then sinking into decadence, then heading to another climax and so on to the next decadence. Roughly speaking, art began in the dark phase of pre-classical antiquity, reached its first climax in about B.C. 450, and then declined into Hellenistic and Roman art. Then with the Middle Ages there started the second curve which rose steadily to its peak in, I suppose, 13th century France, followed again by a decadence ending with the flamboyant of the 15th century. Meanwhile the third curve had started, rising with the early Renaissance, reaching a peak about 1500 and then going into a steady decadence, the end of which was never quite defined but was vaguely supposed to have happened slightly before the time of the writers themselves!

But it was realized in about 1900 that the facts did not really fit into this extremely convenient and simple system. In particular the later phase, vaguely classified as Renaissance, was found not to be as homogeneous as had been thought. It was realized that architects, painters and sculptors of the 17th century in Italy were not simply trying to do what the Renaissance had done and doing it badly, but that they were in fact aiming at something entirely different; and therefore the new concept of the Baroque was introduced. It was gradually analysed and put into its proper historical setting, so that art historians began to realize that the papacy of Urban VIII, with its highly emotional religious atmosphere and its domination by Jesuit ideology, needed, and naturally produced, a quite different kind of art from that which had been created under, say, the papacy of Julius II.

A further stage was reached in about 1920 when it was realized that even this simple division between Renaissance and Baroque was not adequate, and that there was a phase somewhere in the middle of the 16th century which could not be classified as an extension of the Renaissance nor simply as the beginnings of the Baroque. This phase was more carefully studied, and eventually it was named Mannerism. So the phase between the Renaissance and the Baroque, running, roughly speaking, in Italy from about 1520 to about 1590, is that which we call Mannerism.

The reason for the choice of this name, Mannerism, is not at first sight quite evident, but it is partly due to the fact that the style was first isolated in painting and not in architecture. The sort of painters who were first defined as Mannerist were Florentines, such as Pontormo and Bronzino, whose most conspicuous characteristic was their lack of naturalism, and the fact that they used a series of formulæ rather than turn to nature for the details of their compositions. This class of painter was described by Vasari in a passage in which he says that, whereas the painters of the 15th century and of the early 16th century painted from nature—*di natura*—those of the late 16th century painted by manner—*di maniera*—that is to say; they developed a mannerism which they could repeat without reference back to nature. From this sentence in Vasari the name *Mannerism* was coined for this type of painting; and later by analogy—although of course the precise analogy does not exist—was extended to architecture of the same period.

Mannerism reflects a particular historical period which, in itself, differs very markedly from the period of the High Renaissance. The High Renaissance, if we take it as being the style produced in Rome under the papacy of Julius II and reaching its high point with the works of Raphael, the early Michelangelo and Bramante, reflected the state of Italian and, above all, of Roman society and culture at that particular time. It was a short but happy period in the history of the papacy, a period when everything seemed to be going right, when Rome was prosperous for political, economic and religious reasons. It was the one moment when it looked as though the papacy might succeed in forming some sort of unified Italy—an Italy, at any rate, sufficiently unified to be able to compete with the new states arising in the West, particularly France and Spain. It was a moment of commercial and economic prosperity; Rome was, in every respect, at a peak; and this state of happiness was reflected in a tremendous intellectual outburst. The court of Julius II and Leo X was one of the most remarkably active and intelligent courts which has, perhaps, ever existed. In it there flourished not only painters, architects and sculptors, but also poets and philosophers. There was produced within that circle perhaps the most perfect fusion of classical thought, Platonic in form, with a highly developed form of Christianity, which is reflected not only in theology of the period, but in the paintings of Raphael. I need not analyse those paintings; you know them as the supreme creations of humanism of this particular type.

That happy period of the papacy was, however, very short lived. Two crucial things began to happen which gradually upset these plans and eventually destroyed the civilization which was associated with it and which sprang from it. One of those events was religious and the other political. The religious trouble was, of course, the Reformation, and one may for convenience link it with the year 1517, when Luther posted his theses against the papacy on the church door at Wittenberg; and the political trouble led ultimately to the Sack of Rome in 1527. What these two events meant was really the undermining of that papal state which Julius II had built up and which, for a time, Leo X maintained. The Reformation weakened the structure of the Catholic church, and the Sack of Rome was only the culmination of a series of challenges, political and military, to papal power which, under the extremely competent and militaristic government of Julius II, had been held in check, but which, with the increasing threat from Spain and France, and the much weaker hand of Leo X, ended in disaster in the shape of the over-running of Italy and finally the Sack of Rome.

As a result of those two incidents you can imagine that the whole atmosphere of Rome and, with it, the rest of Italy changed very acutely. It is hard for us today to imagine how deeply the Sack itself affected Roman life. It completely interrupted almost all forms of intellectual activity for a matter of seven or eight years. The result was that instead of the air of calm, classical humanist confidence which had dominated

before, an atmosphere of great disturbance, uneasiness and disquiet reigned. Instead of the calm which prevailed with Julius II, there was on the contrary strain, struggle and conflict.

A further point was that the principles of humanism, which had been the foundation of papal culture before this period, were seriously challenged. Humanism with its emphasis on the right of individual reason to form its own opinions was regarded by the Church, after the Reformation, as a dangerous tendency. It had been closely linked with the Reformation itself, and the application of human reason to the dogmas of the Church had been shown to lead to disaster. The result was, therefore, that humanism of the kind which had flourished before was at a discount, and, when you get to the counter-Reformation period of the 1540's, it is deliberately and consciously suppressed.

Therefore, during those years, roughly from 1520 to 1530, there was a complete change of atmosphere in Italy which led to a change of style in painting and in architecture. It was out of this atmosphere of conflict and disquiet that the style which we know as Mannerism arises. It takes different forms in different parts of Italy, but I want to consider it mainly in Rome, which was the centre of the development. I shall begin by showing you slides to indicate the development in painting and, then to illustrate the parallel development in architecture.

It is always wise when talking on the High Renaissance to start from Raphael, who embodies in his painting more purely than any other artist the principles about which we are talking. In the frescoes of the Stanza della Segnatura all the principles of harmony and humanism which I have tried to indicate are embodied in their most perfect form. The content of the frescoes sets out the different aspects of Greek philosophy, particularly of Platonism, and their fusion with the Christian elements. The point to which I particularly want to draw your attention, however, is a formal one. The 'School of Athens' is always held up as the perfect example of the logical spacing and planning of High Renaissance design. The space is calculated and planned out so carefully that you can draw the ground plan exactly and know precisely where every figure is placed.

If you compare this with a group of Mannerist paintings you will see at once that the position is entirely different. The clarity, logic and space of the High Renaissance are taken and, so to speak, inverted. But it is possible to invert these features in several different ways.

In some Mannerist paintings, for instance, the space is not clear in the sense that it is very much overcrowded. In Rosso's 'Moses and the Daughters of Jethro', for instance, the figures are heaped one on top of the other in high-relief form. You could not draw a ground plan of this composition; the figures are piled up, and the space, such as it is, is created by this heaping up from the back towards the front, the result being an effect of disturbance rather than of the logic and clarity aimed at and attained by Raphael.

Fig. 1: Brunelleschi. The Pazzi Chapel, Florence

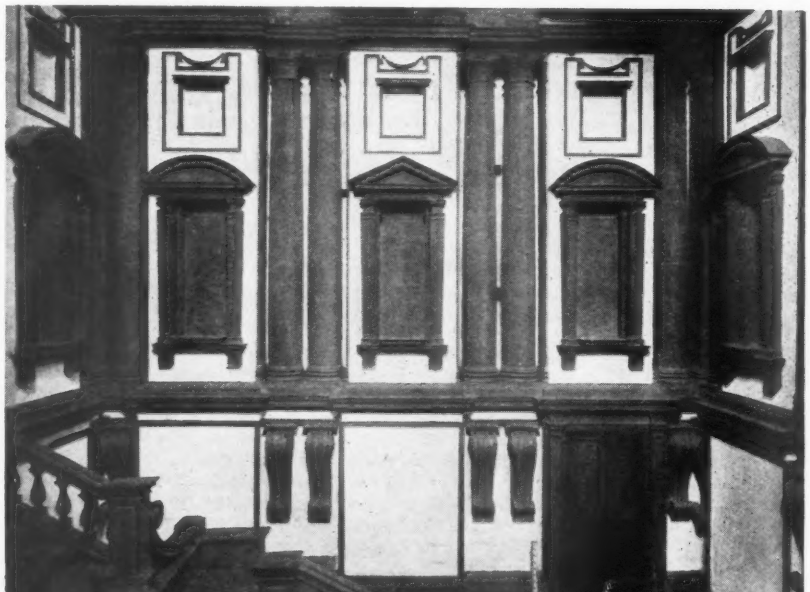


Fig. 2: Michelangelo. Vestibule to the Biblioteca Laurenziana, Florence

Or, to take a Venetian example, in Tintoretto's 'Last Supper' from S. Giorgio Maggiore, you see a different attitude towards spacing but equally Mannerist. Whereas in Raphael the space limits were defined with the utmost clarity and the whole form was perfectly clear, in this case everything is blurred. Instead of making the walls of the room defined and visible, they are broken and covered over by a whirl of glowing angels radiating from the light above the figure of Christ. This deliberate vagueness of spacing and the arbitrary perspective are intended to heighten the dramatic quality of the composition and emphasize a feature on which the High Renaissance did not lay stress, namely, the supernatural. In contrast with Raphael, who always expressed the human element and embodied theological principles in that form, Tintoretto emphasized the supernatural giving an impression of unreality to the whole scene.

Fig. 3: Borromini. S. Carlo alle Quattro Fontane, Rome

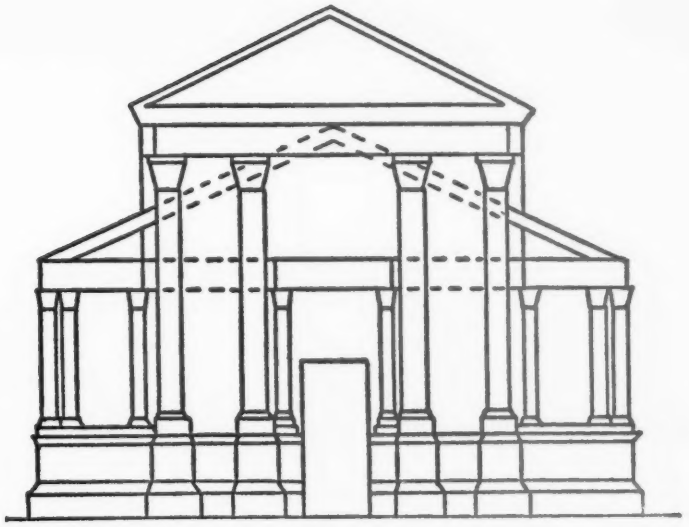


Fig. 4: Palladio. S. Francesco Della Vigna, Venice

Or consider the question of proportion. The High Renaissance sought the typical, the normal, whereas Mannerism prefers the abnormal. Michelangelo, for instance, in his Adam on the Sistine Ceiling is not strictly naturalistic, but presents the ideal of a particular type. In Mannerism you get the opposite to that, but once again there is not a single opposite, but several alternatives.

For instance, in Michelangelo's 'Last Judgment' you will see that his abnormality is extreme heaviness. The figures are lumpish, weighty, over muscular, tragic and expressive of the atmosphere in which the artist painted the 'Last Judgment'—a subject in itself typical of that unquiet period.

But the opposite may also happen in Mannerist painting. In El Greco, for instance, elongation is used to give a spiritual quality to the figures and emphasize their spiritual and not their physical significance.

Before going on to the architectural parallel, I want to make a further distinction in painting, namely, that between Mannerism and Baroque; because many of these elements which I have tried to isolate in Mannerism may seem to you associated rather with the Baroque. But if you compare the paintings which we have been looking at with a mature Baroque composition, such as Rubens' 'Miraculous Draught of Fishes', you will see that the element of conflict is not apparent.

The space composition, for instance, although it is quite different from Raphael's spacing, is perfectly clear. Rubens has moved from the placid style of Raphael's composition to composition based on movement, but his statement of it is extraordinarily explicit and without the confused effect which you would find, for instance, in Tintoretto. Again, in the matter of proportions, although the men are rather muscular, they have neither the grotesque heaviness of Michelangelo nor the extreme emaciation of El Greco.

Turning now to the architectural parallel, one can see in the architecture of the middle and late 16th century the same or at any rate parallel phenomena occurring, parallel in that they reflect the same feeling of disquiet and of conflict.

I want to consider this development in relation to one or two fundamental questions of architecture; first of all in relation to the treatment of the wall and then in decoration. In a classical example such as Brunelleschi's Pazzi Chapel (Fig. 1) there is a high degree of logic in the treatment of the wall surface and in the fact that the columns have their proper carrying function, support the flat entablature, and stand free from the wall linked to it by a barrel vault.

Now, if you compare this with the Mannerist treatment of the wall shown in Michelangelo's vestibule to the Laurenziana (Fig. 2), you will see how completely different it is. Here one can see all the principles which were manifest in Brunelleschi taken and, as was the case in the painting, simply inverted. Look, for instance, at the treatment of the columns. Whereas in the Pazzi Chapel the columns stood free and performed a carrying function, here they are not only not in front of the wall, but actually set into it. A slot is cut out of the wall into which the columns are set so that the surface of the wall comes in front of them. Moreover, they give the visual impression of great weight, but are apparently supported only on the consoles which are deliberately made inadequately small for the apparent weight of the columns above. So Michelangelo has treated his columns in a wanton manner, and has completely broken the unity of the wall. It is interrupted with brutality by the niches and by the slots and columns. If, moreover, you examine the details, such as pilasters and capitals, you will see that everything is the converse of what it should be. In every case there is an inversion of logical structure which expresses in a very dramatic and sensitive way that atmosphere of disquiet and conflict which we saw in Michelangelo's later painting.

But it was not only in Michelangelo's architecture that we find these features. The same is visible in even so apparently classical an architect as Palladio.

In his façade of S. Francesco della Vigna (Fig. 4), for instance, you will see conflict of a different kind. Here you have two orders, a small one at the side and a big order supporting the middle pediment; but they are treated in an arbitrary way, so that they form two frontispieces which interpenetrate and interlock with each other. This is a different example of deliberately illogical treatment.

Now let us carry this problem through to the next stage, the stage of the Baroque. We have seen that Michelangelo introduced an element of movement backwards and forward in the wall, but that movement was discontinuous and inconsequent. The Baroque takes advantage of his idea of breaking the wall surface and works it into a continuous movement without the element of conflict which it always has in pure Mannerist architecture.

One can see this, for instance, in the development of the church façade. In Maderna's S. Susanna there is considerable variation in the surface, but, you will notice, a steady progression forward towards the middle. The movement is continuous, leading up to a climax, not broken and irregular as in Mannerism.

This is again carried a further stage in the full Baroque. They took the next logical step and actually curved the front of the church, as in Borromini's S. Carlo alle

Fig. 5: Bramante. The Tempietto in S. Pietro in Montorio, Rome

Quattro Fontane (Fig. 3). You will notice that the wall surface of the church is bent into a double S-curve which runs through both stories and establishes the main movement of the surface in an absolutely clear and lucid way.

The same happens in regard to planning, and I now want to show you a short sequence of church plans, starting from the circular plan of the High Renaissance and going on to the Mannerist and Baroque variations on it. Bramante's Tempietto at S. Pietro in Montorio (Fig. 5) shows the classical circular plan in its most perfect form, rising to a completely cylindrical structure. Here the emphasis is on the circle as being the mathematically perfect form, in accordance with the pursuit of mathematical perfection sought by the High Renaissance. If you compare this with Michelangelo's plan for the Cappella Sforza in S. Maria Maggiore (Fig. 6), you will see that the whole method changes. Here you have a more or less square vaulted central element which breaks out into shallow chapels, which are arcs of a circle, cut off at an unexpected point and not forming a complete shape. Whereas Bramante aims for the perfect mathematical form, Michelangelo deliberately exploits the ambiguity and uncertainty of these incomplete and therefore suggestive forms.

It is further true that, whereas the High Renaissance liked the circle for its ground plans, Mannerist and Baroque architects generally preferred the oval.

In a late 16th-century church, such as S. Giacomo degli Incurabili in Rome, the ground plan is based on an oval, but not a continuous oval. You are left with a certain ambiguity in the church, for whereas your attention is directed down the church by the major axis of the ellipse which leads up to the high altar, at the same time, owing to the tall chapel openings in the middle of each side there is a cross emphasis which conflicts with the main movement towards the altar. Now in the Baroque period this conflict is resolved, as was the case in façade architecture. For instance in Bernini's S.Andrea al Quirinale there is a continuous movement which runs along the unbroken entablature, leading your eye up to the central point, the chapel with the High Altar. So once more it is a question of Baroque continuous movement as opposed to the static principles of Bramante or the disjointed movement of Mannerist design, that is to say, the same principles apply in planning as in the treatment of the walls.

If we look at the decoration of buildings we see that the same features occur. To take what is really the most classical example of interior decoration of the High Renaissance, the Loggia at Villa Madama, you will see how logical it is. The walls and vaulting are decorated with stuccos in various colours, but in such low relief that they do nothing to disturb the surface, and arranged so that each element keeps to its own zone. The decoration is logically applied to the structure, in a completely High Renaissance manner.

Now compare this with a detail of Mannerist decoration in the Sala Regia of the Vatican. The wall is divided into a series of big panels, between which are smaller panels over the doors. But the broken pediments over the small panels overlap the larger and rest on their frames. That is to say, the two systems of decoration for the small and large panels overlap and interlock.

In painted decoration also the Mannerists play some unexpected tricks. In Salviati's frescoes in the Farnese Palace, for instance there are several planes of illusion—painted perspectives, imitation tapestries, etc.—and in one case at least figures fly from one world into another, from the double illusion of the tapestry world into the simple illusion of the painted world.

Baroque artists also use illusionism, but they like it to hit you and to be absolutely unambiguous. The most elaborate Baroque illusionist ceiling in Rome is that of S. Ignazio, by Pozzo. Here the illusion is instantly effective, and it leaves you in no kind of doubt. You are supposed to imagine that the roof of the church is removed, and that a superstructure carries the walls of the church upwards, creating a space through which the figure of S. Ignatius ascends. This method may be bogus, but it is logically and consequently bogus.

I hope I have made clear certain principles which seem to me to underlie Mannerist architecture as it existed in Rome in the 16th century. Mannerism does, however, occur in other places. It spread very widely through Europe in the years immediately succeeding this period, but outside Italy it raises, I think, rather different problems. In Italy, when you look at a building like the Laurenziana, you can be certain that if Michelangelo was using a column improperly he knew what he was about. He was not doing it in ignorance, but, for the reasons which I have tried to indicate, he deliberately broke the rules.

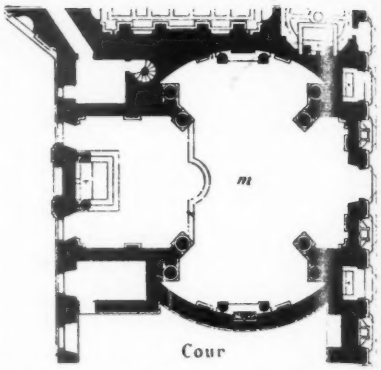


Fig. 6: Michelangelo. Sforza Chapel, S. Maria Maggiore, Rome

But when we come to England, Germany or France, we are faced with a different problem. In a building like Charlton House (Fig. 7), for instance, one is tempted to see a splendid example of Mannerism. The sequence of pilasters is interrupted in a wanton manner by the window, leaving only the capitals, suspended in space. This is certainly a Mannerist device; but I do not feel certain that the architect of Charlton knew how wanton he was being. It is not by any means plain that he knew the rules and was breaking them consciously, like Michelangelo. He may have acted in ignorance; this may in fact be an example of what I suspect is a widespread phenomenon in north European architecture, which one might call 'naive Mannerism'.

I said earlier that Mannerism, although primarily applied to the art of the late 16th century, also occurred in other times and places.

It would not, for instance, be improper to call some of the rock tombs of Petra by the name of Mannerism. The upper storey of these has the broken and interrupted pediment which corresponds in feeling closely to the sort of treatment which we saw in Italian Mannerism. I know too little of ancient history to be able to say what historical background produced this phenomenon in architecture, but when it occurs in later periods one can, I think, see a historical connection. It is noteworthy, for instance, that at the end of the 18th century a period of social upheavals produced a considerable outcrop of Mannerism both in painting and in architecture.

In painting, the group around Blake suddenly returned clearly and, incidentally, quite consciously to Italian Mannerist art as a source of inspiration. In the water colours of Blake you will see all the Mannerist elements, such as distortion of proportions, overcrowding of the space, and the extreme exaggeration, used to produce dramatic effect.

One can find corresponding elements in certain architecture of the period also, for example in the work of Frenchmen like Ledoux, working before and just after the French Revolution. In his architecture we can see an arbitrary juxtaposition of ele-

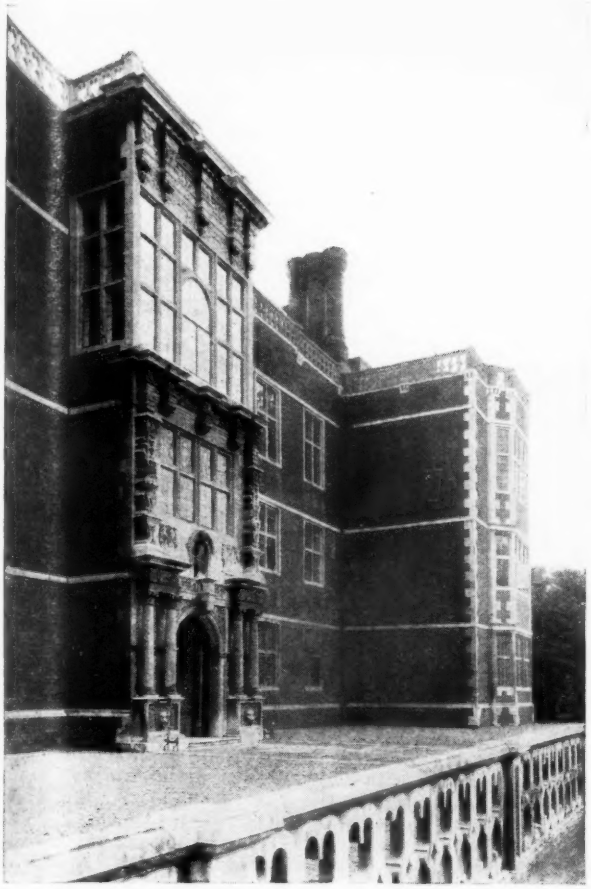


Fig. 7: Charlton House, Greenwich

ments which is strictly Mannerist, and in some cases direct borrowings from Mannerist architects like Giulio Romano.

Turning to England, you will trace elements of Mannerism even in so classical an architect as Soane. In his Treasury corridor in the Bank of England you will notice that as you come down the corridor you are not met with an opening but a pier between two skew arches. Here again the illogicality of it is a Mannerist element.

But I think one could come nearer home than that, and say that in a great deal of contemporary architecture one can trace Mannerist elements, both in academic and in functional architecture. (The same is, incidentally, true in painting. One can analyse almost the whole of Fauve and early cubist painting in terms of Mannerist elements.)

For instance, if you look at the Victoria Palace you will see that the architect has set the columns, contrary to logic, into slots in the wall, as in Michelangelo's Laurenziana. Or in the Gaiety theatre you can see how the cylindrical element on the corner bursts through the flat façades. In the New Adelphi Theatre, there is an even more marked intrusion of the prismatic form which thrusts its way through the façade.

The same applies to certain forms of more advanced architecture, particularly in the more romantic German school, represented by Mendelsohn, as will be seen from the Mosse offices in Berlin (Fig. 8). Here the corner presses through the side façades, giving a feeling of interlocking, overlapping and the thrusting of one element into another which is almost analogous to Palladio.

It is even possible, I believe, to find some of these elements in the architecture of Le Corbusier, particularly in his treatment of interior space, in the sense that he frequently seems deliberately to avoid any completely closed form, and allows, on the contrary, the maximum degree of interpenetration, deliberate uncertainty, if you like, in the definition of the space. I think it is very significant that of all the architects of the Renaissance and the 16th and 17th centuries, Le Corbusier picks out for particular praise the late Michelangelo, and I want to conclude by reading to you what he says about the structure of St. Peter's. He says: 'There is no art without emotion, no emotion without passion. Stones are lifeless sleeping in their quarries, and the apses of St. Peter's compose a drama. . . . The work of Michelangelo is a creation, not a Renaissance, a creation which bursts out of classified periods. . . . The whole mass (of St. Peter's) makes a striking novelty in the dictionary of architecture, and it is worth while pausing a moment on this *coup de théâtre* after the High Renaissance'.

DISCUSSION

The President: I will now call upon Dr. R. Wittkower, Reader in the History of Art at the University of London, to move a vote of thanks to Professor Anthony Blunt.

Dr. R. Wittkower: We have listened to an extremely interesting and able statement of the Mannerist case, and I hope that those of you who have not been in contact with that problem before have been thoroughly convinced of the extent of it.

I quite realize that there may be sceptics. There may be some of you who regard Mannerist architecture as a problem which really exists as a form of deliberate degeneration. Mannerist architecture, it is true, is an art historical invention. We have to confess that. It is an invention of the last twenty or thirty years—perhaps it might be more accurate if I said it is a rediscovery of the *locus classicus*, if I may use the term, in connection with Mannerism. In talking about Michelangelo it is said that he was the one who broke the chains and bonds of those ideas which people have followed, and that is exactly what did happen. As Professor Blunt quite rightly pointed out, it was a deliberate act of inversion; a deliberate act of anti-classical inversion, and we have, I think, to regard Mannerist architecture bearing that aspect in mind.

The first Mannerists, and those who used the Mannerist element in the most forceful contradictory form, were educated during the High Renaissance. They grew up with that grammar of forms, of which Raphael would be the parallel, and they reverted consciously into that anti-classical style. We find, for instance, in the case of Palladio, an architect who starts with classical High Renaissance style and slowly changes his style. So we are faced with a fluid situation. It is not a style which we can analyse and pin down in the same sense as we can lay our finger on the High Renaissance buildings which represent the complete ideal of harmony.

A second element which is perhaps worth while pointing out is that these Mannerist features, which were formed by Michelangelo and other architects, degenerated into a form of academic language towards the end of the 16th century, and that academic Mannerism went down through the 17th and 18th centuries. Forms of Mannerist conventions also went right through the 17th and 18th centuries and reach our own days, but during that process of migration, those academic Mannerist forms and conventions have lost entirely their original features, which we have seen in the work of architects like Michelangelo, and it would be easy to show how such Mannerist elements—elements of the early Mannerism—penetrated even into England, and how they were interpreted in a decorative sense and without that element of conflict which is characteristic of the early phase of Mannerist architecture.

I will not keep you any longer, but would like to thank Professor Blunt for his most stimulating lecture.

The President: I will now call upon Mr. John Summerson, F.S.A., A.R.I.B.A., Curator of Sir John Soane's Museum, to second the vote of thanks to Professor Anthony Blunt.

Mr. John Summerson: You will, I know, agree with me when I say we have heard a very remarkable elucidation of an extremely difficult subject. Those who know of Professor Blunt and his activities know that he is constantly doing this sort of thing, and doing it in connection with all sorts of subjects related to the arts.

Fig. 8: E. Mendelsohn, Mosse Offices, Berlin

Personally, I found the whole lecture extremely illuminating. It had never occurred to me that Sir John Soane was a Mannerist, and I find myself putting up a sort of protest! It may be possible—and this is one question which I should like to ask—that there are such things as Mannerist personalities, because I do not think that you can find any trace of Mannerism in a number of architects closely related, such as Smirke or Nash. It does seem to me that it is the Mannerism of a highly strung nervous designer, the Mannerism of a personality rather than of a period.

I do not want to say any more about the lecture, but I should like to say a little more about Professor Blunt himself. I think this is the first occasion upon which a Director of the Courtauld Institute has given a lecture in this room, and if that is the case, it is a very important occasion. I expect everybody here knows what the Courtauld Institute is. It is not a very old Institute, being founded I believe about eighteen years ago, but it is the school of the University of London entirely devoted to the study of the history of art. About five years ago the Warburg Institute, with a much longer tradition of extremely profound scholarship, was united to Courtauld at the university. The things which are studied at the Courtauld Institute are, as you can easily understand, those which we also study and teach in our schools of architecture.

As you know, in nearly every category of the architect's work specialization has increased enormously, whether in technical categories or, as in this case, the more academic categories. The study of the architecture of the past has, in this new academic world of art history, been raised to a much higher level than that to which we are accustomed in our schools of architecture. That suggests to me certain things which should be done, but I do not quite know what those things are. Here is a specialist who has come to talk to us and give us a specimen of the kind of specialist work which is going on in his department. Just as we might have heard a specialist on pre-stressed concrete or something like that talking perhaps above our heads about something very important, so here we have Professor Blunt, another specialist in a different field of our work, talking to us in the same way. On those grounds I think you will agree with me that this is an important occasion, and I should like to add my thanks to those of Dr. Wittkower to Professor Blunt for coming here and talking to us.

Mr. F. L. Jackman [*F*]: It did occur to me that quite a number of the qualities of the Mannerist tendency would apply to any kind of romantic school of art. In the case of Michelangelo and his contemporaries in Rome, it is clearly a fairly conscious reaction against extreme classicism and the use of classical forms; but the elements of contrast of violence in painting seemed to me might be qualities of any kind of romantic art. I wonder whether Professor Blunt could clear up what is peculiarly Mannerist in, say, a painting of Tintoretto or, for that matter, of El Greco? If it merely distorts, then obviously it would apply to all mediæval sculpture which I assume you would not classify as Mannerist. Also in a lot of modern art distortion is employed, but it is not necessarily Mannerist.

Mr. P. D. Smithson [*A*]: I do not know whether it has occurred to other people, but in the case of those who were trained in strong academic tradition, as was Michelangelo, and then later inverted that traditional flow of classicism, is it possible that they might have remained under that original influence?

Mr. C. G. L. Shankland [*A*]: It strikes me, following what Professor Blunt has said, that the same kind of analogy which he has made in tracing Mannerism through the history of painting and architecture can also be shown with regard to other attitudes of mind of painters and architects. One might categorize four attitudes of mind as Classical, Baroque, Mannerist and Romantic, one of which seems to have emerged at some definite period in history in relation to political and social events. I should like to ask Professor Blunt whether he thinks the same kind of analysis can be made and traced with regard to the four categories if there are in fact four categories.

Mr. D. H. McMorran [*F*]: Reverting to the point raised by Mr. Jackman, I was thinking during the very interesting lecture of Francis Bacon's dictum that there can be no beauty without some element of strangeness. He was a philosopher of the period about which we are speaking, and obviously that element of strangeness is a sort of romanticism, and I thought that Mr. Jackman's point was a good one, namely, that this particular phase of art is just that. I shall go back, as I always do after a lecture on æsthetics, and read my Geoffrey Scott!

Mr. G. B. Oddie [*A*]: I should like to ask Professor Blunt what antecedents he has for his exposition of the Mannerist tendency as an example of the state of mind arising from social conditions. I should like to know what previous art philosophers, if any, have dealt with it.

Professor Blunt: I am very grateful indeed for the kind things which have been said by Dr. Wittkower and Mr. Summerson. I think I ought to reveal what an embarrassment it has been to find Dr. Wittkower here, because after all he invented, or as he puts it, discovered Mannerism! Therefore it has been extremely embarrassing to speak in front of such an expert on the subject.

With regard to Mr. Summerson's remarks, I must deny that I said Soane was a Mannerist. What I think I said was it is even possible in so classical an architect as Soane to find certain Mannerist elements. It is not accusing him of being a Mannerist. Of course, one could show in far more cases the classical element.

I agree that there are Mannerist personalities, but I think also that there are certain periods at which there is a sudden outburst of Mannerist personality. The rate of insanity among artists and poets during that particular period was quite high, which may be linked with it! Cowper and Romney were both certified, Blake was an eccentric, and there was a series of melancholics and eccentrics. On the other hand, I do not think there was one single insane artist in the High Renaissance. I think there

are moments in history which produce a great crop of Mannerist personalities.

On the question of the Classical, Romantic, Baroque, Mannerist, etc., one gets into very deep water when one starts to use the word romantic. I should much prefer to come back to a slightly different kind of arrangement in which you have two main categories, roughly speaking a rational and anti-rational. In that case you would say that in principle the classical approach fits in with the more or less rationalist approach. Then the other three, I think, subject to qualification, tend to fit into the irrational. I think the difference between the Mannerist approach and the Baroque approach is fundamental. Again, I think it is associated with historical events. I did not go into the question of the background of Baroque as opposed to Mannerism, but in the Baroque period there is, I think, a recovery of the feeling of confidence. This gets complicated, but I think what happens is this. In the 17th century the Church of Rome, although having its position fundamentally undermined by the Reformation and by political events which surrounded it, made a remarkable recovery, and under the papacy of Urban VIII, it looked as though it would score a very big comeback. In fact there was this fundamental break in tradition and the fact that Protestantism had come to stay. However, in Italy there was a great rise of enthusiasm which was doomed, and it was inevitable that it could not last. Therefore, you get an ambiguous state in the Baroque period of false optimism which is as different, I think, from the real solid confidence of High Renaissance as it is from the misery, conflict and unhappiness of Mannerism. I think one could find similar outbursts of Baroque style in other periods when one finds something analagous historically.

When one comes to the question of romanticism, it seems to have so many different meanings that it is unsafe to use it. If you take romanticism in a strictly historical sense, I think you have to divide it up into an early Mannerist phase of romanticism and a late Baroque phase. You can never say that A is romantic without immediately saying, 'What I mean is, he has certain elements of romanticism'. Therefore, I think that one is really constantly wandering through a series of overlapping phases, but in the case of Mannerism there is not one constant Mannerism and the whole thing is in a state of flux. There are, however, probably some elements which one can, roughly speaking, isolate and say, 'These are common to most of the phenomena which we call Mannerist' and they blend with other elements. In the same way with Baroque one can say there are certain elements which are the same as these phenomena. I have no doubt that if one knew enough about history one could isolate certain historical phenomena which existed at the stages where these different waves of Mannerism, however mixed, Baroque or Classicism, occur.

The R.I.B.A. Questionnaire

Before the end of this month, members and students of the Institute should receive the questionnaire to which brief reference was made in the February JOURNAL under the heading of 'Statistical Information on the Profession'. The questionnaire will be accompanied by a letter from Sir Percy Thomas explaining the reason why the committee, which has been set up by the Council to consider the present and future of architectural practice, thought it indispensable to their enquiry to obtain the information which the questionnaire aims to elicit.

From the outset the Council and the committee have avoided the partisan and perilous approach, urged in some quarters, of how to transfer the work from the official to the private architect. They have agreed that the real problem is to see, in so far as the R.I.B.A. can influence such matters, how the nation's architectural service can best be organized to execute the immense volume of architectural work that lies ahead. It is perhaps true that at no other period in our history has there been such an awakening to and awareness of architecture as there is today among the people of this country, governors and governed; it is a challenge to the profession as well as a spur. Shortage of manpower, scarcity of materials, licences, controls, regulations are, we hope, but temporary hindrances to progress. How far have they affected the distribution of work between the different sections of the profession? By how much have they slowed down pace? These are among the questions which an analysis of the completed questionnaire should answer.

In and outside the Institute, complaints are heard that private architects have not sufficient work to ensure their livelihood. Yet any employer of salaried architects and assistants, public or private, who has recently had need of adding to or replacing his staff, will readily testify that assistants are very difficult to obtain. Where are they? Where do they go? Where do they really want to go? The experience of the R.I.B.A. is that the great majority of new entrants into the profession seek as a first choice employment in the offices of private architects. On the other hand, the private architects complain that they cannot obtain their services because Government departments and local authorities snap them up. The Committee think that the answers to the questionnaire will explain these apparent contradictions and point to a solution.

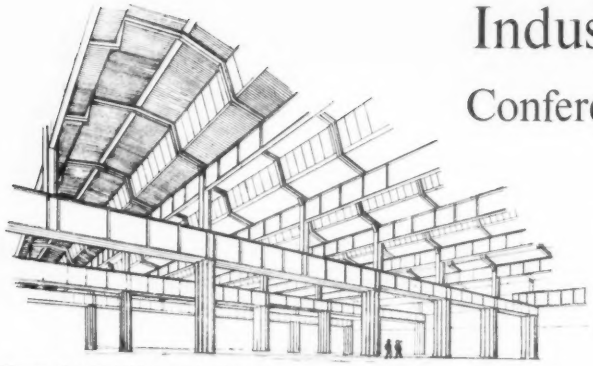
A word about the questionnaire itself. Each question has been framed and tested very carefully, with the intention that there should be none which does not call for a simple direct answer, mostly by the writing of an 'X', a 'Yes' or a 'No'. Nevertheless, many members will doubtless think of other questions which might have been added, or of some which might have been omitted or differently worded. One draft list of questions consisted of 20 foolscap sheets. The overriding principles that have guided the committee in deciding on the questions and their phraseology were to omit everything which was not absolutely essential to their purpose, everything which could not be simply and unambiguously worded, and everything which might have been suspected as probing unnecessarily into the affairs of individuals.

Those responsible for the preparation of the questionnaire have given some random examples of the kind of information the statistical analysis should reveal. Three of the more important examples are:—(*a*) A general division of the members into private and official practice in 1938 and at the present time; this will show what exodus, if any, there has been from the former to the latter owing to the intervening war years and their aftermath. (*b*) The numbers by which local authorities have increased their architectural staffs during the last 11 years. (*c*) The number of private architects who have had to abandon their practices because of lack of work or other reasons. In fact, anyone with any experience of arithmetical permutations may after a short study of the questions find that the answers will provide a multitude of variants for statistical analysis.

The Council appeal to every individual member and student to play his or her part in helping the Council to obtain the information sought by answering the questionnaire as accurately as possible and returning it without delay.

Industrial Architecture

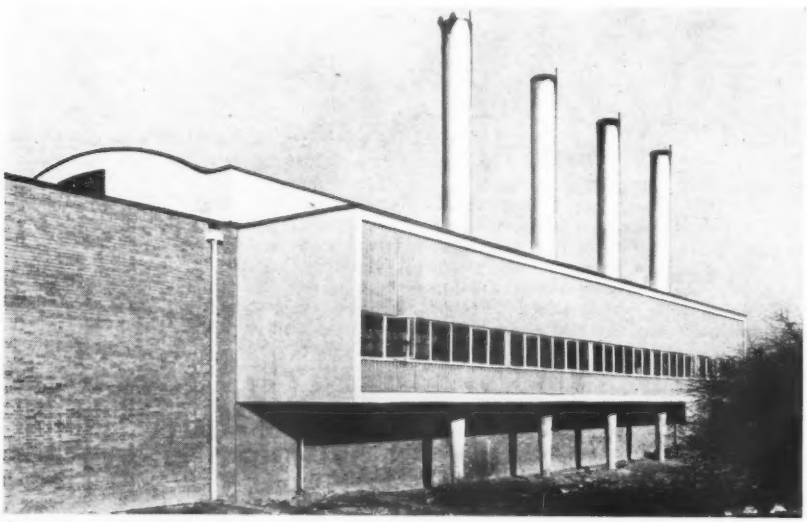
Conference and Exhibition at the R.I.B.A.



From the Exhibition Handbook. Perspective of the interior of a new steel rolling mill for the Appleby-Frodingham Steel Co. Architect: Frederick Gibberd [*F*]. Engineers: Scott and Wilson

THERE WERE some who questioned the wisdom of the Royal Institute when they decided to hold an exhibition and conference on 'The Architect in Industry'. It was said that manufacturers would not attend a conference at the R.I.B.A. and that factory architecture was not good exhibition material. The overwhelming success of the conference and of the opening days of the exhibition has set all doubts at rest. Two hundred leading industrial firms and the nationalized industries sent representatives to the conference; the keenest interest was taken in the papers and discussions, the last meeting being as fully attended as the first.

A feature of the Conference was a dinner to leading industrialists, from both the nationalized industries and large public companies, and there were also present senior officers of the Ministries most concerned with factory building. This was held on the first day of the Conference (3 March). In most cases it was the first occasion that many of the guests had visited the R.I.B.A. building and the opportunity was taken of showing them round. The atmosphere of the dinner was completely informal; the seating of architects and industrialists in small groups greatly facilitated the exchange of views.



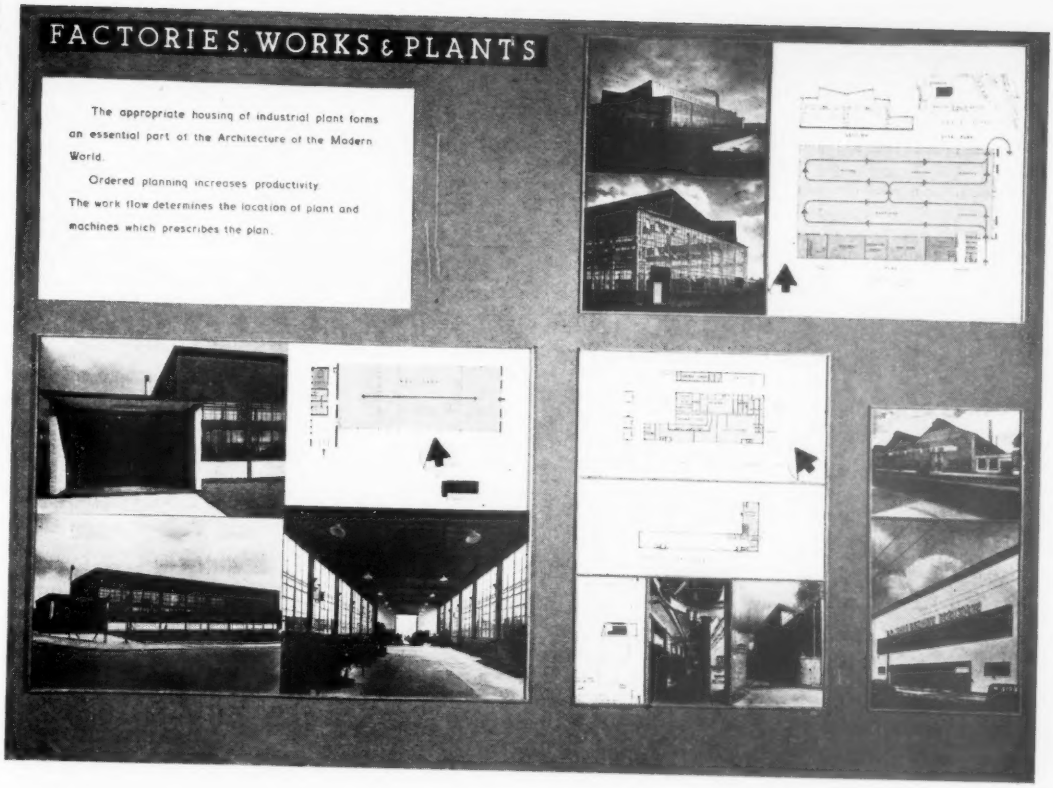
Boiler house. The Bristol Aeroplane Company Ltd; at Filton. Architect: Eric Ross [*A*]

Hoffman-La Roche laboratory, Basle. Architect: Professor O. R. Salvisberg.

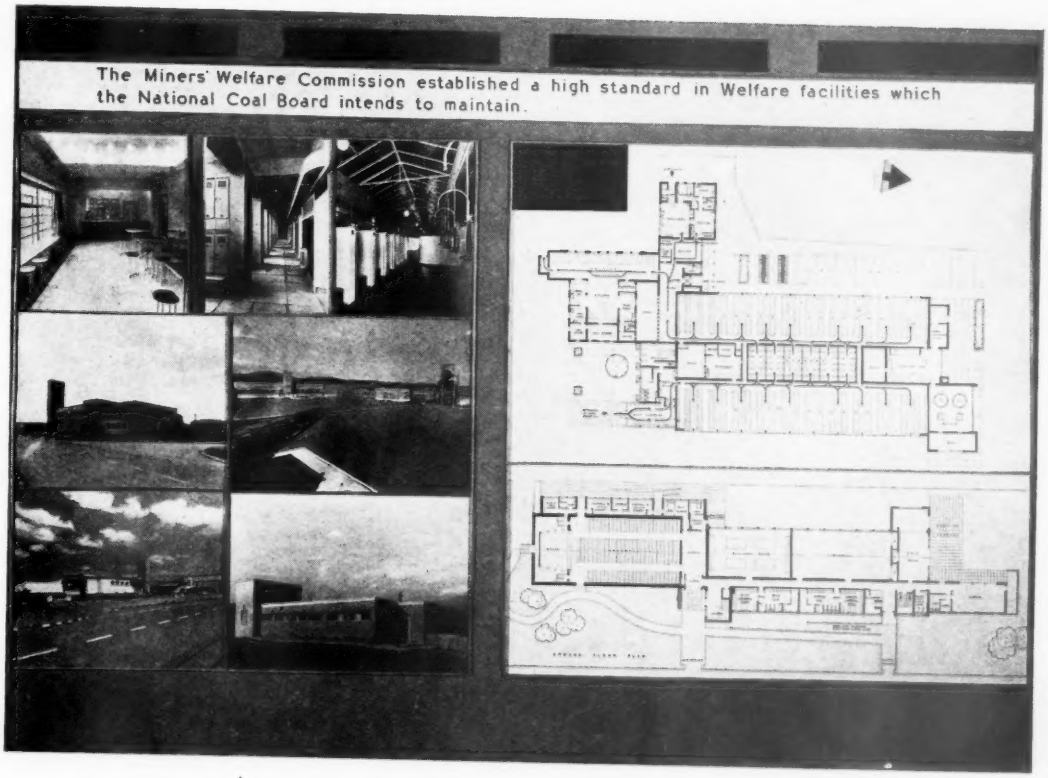
The exhibition chiefly illustrates what has been done in the way of new factory construction since the war in Great Britain. There are a few foreign examples and some British work from just before the war, but these were selected to illustrate specific points. The main feature of the exhibition is that it sums up the first stage in the immense task of rebuilding and rehabilitating British industry and points out the lines of future development.

These functions—conference, dinner and exhibition—have combined to present a very strong case to the industrialist for the necessity of employing the architect and of employing him in the right way. The exhibition in particular gives visual proof of what the architect can achieve for industry. It covers the third of the three major fields of the nation's building activity since the war, the two others being housing and schools. Sir Percy Thomas stated at the conference that during the last three years a total expenditure on new factories of some £140 million has been licensed, though about half of this is still in abeyance under the scheme for restricting capital expenditure. These sums are of course trivial compared with the total amount that must be spent during the next 20 or 30 years if Great Britain is to modernize all her obsolescent industrial plant.

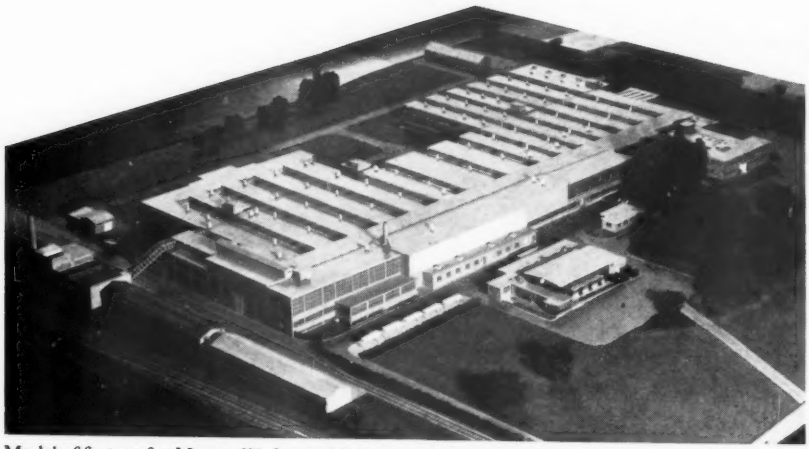
An impression gained from the conference and exhibition is that there has been a great change in the outlook of both architects and industrialists towards factory building. Architects have realized that they have to appreciate the viewpoint of the manufacturer, that they must thoroughly understand the process to be housed and that their buildings, above everything else, have to be built at a cost which is reflected in the selling price of a finished article. Industrialists have realized that without the


FACTORIES, WORKS & PLANTS
The appropriate housing of industrial plant forms an essential part of the Architecture of the Modern World.
Ordered planning increases productivity.
The work flow determines the location of plant and machines which prescribes the plan.

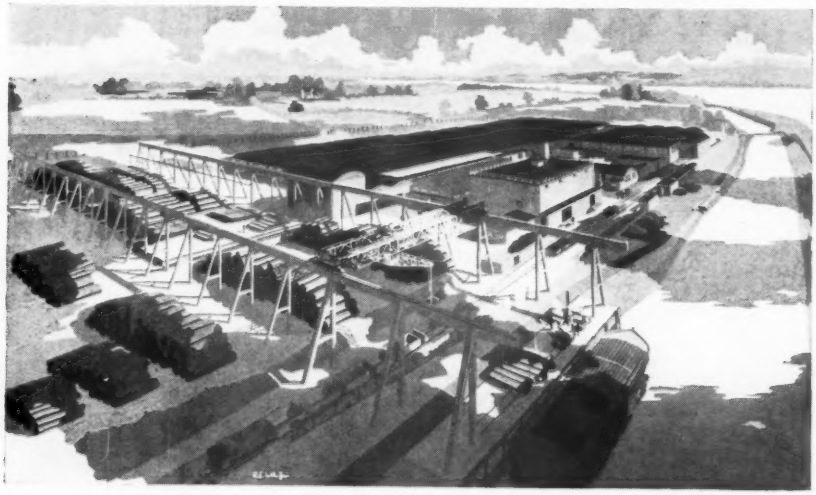
A typical screen illustrating individual factories. Plans have standard colouring of units and arrows showing the process flow

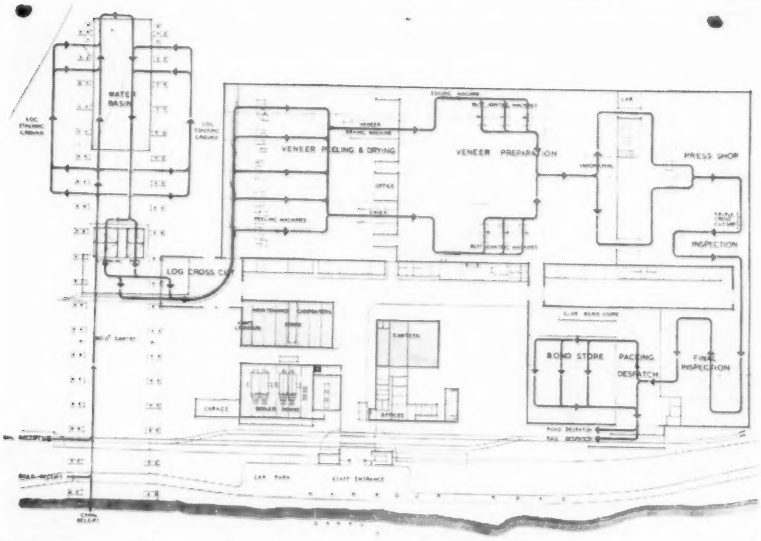

The Miners' Welfare Commission established a high standard in Welfare facilities which the National Coal Board intends to maintain.

A typical screen in the Welfare Section showing photographs of various Miners' Welfare buildings and the detailed plans of a typical pithead bath



Model of factory for Messrs. Wedgwood & Sons, Ltd. Architects: Ramsey, Murray and White [*FF*]





Perspective and plan of plywood factory at Lydney for H.M. Government. Architects: Clifford, Tee and Gale [*FF*]

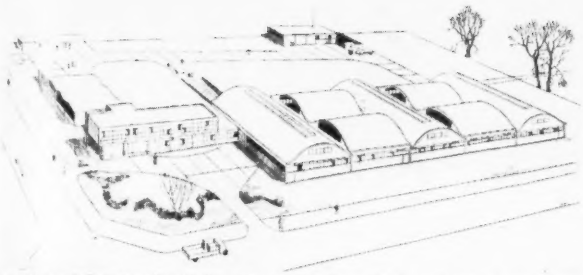
architect they stand little chance of getting a factory which is both efficiently planned and well designed. While it is true that some manufacturers find the architect a convenient instrument for coping with town planning regulations, licences, materials allocations and other current nuisances, it is equally true that many employ him for his skill in planning and his ability to see all round a project.

A report of the conference will be published in the next two issues of the JOURNAL and will also be bound into a second edition of the Exhibition Handbook, which will be ready about the middle of April; details will be given in the April JOURNAL. We also hope to publish in full, as articles, some of the more important technical papers, as space permits during the summer months.

The first morning of the conference was devoted to *Large Scale and Small Scale Industry under Private Enterprise*. Sir Percy Thomas was in the chair and the speakers were Mr. Anthony M. Chitty [*F*], Lord Forrester, Managing Director of Enfield Cables Ltd.; Mr. C. S. White [*F*], whose paper in his absence owing to illness was read by Mr. E. L. Bird [*A*], and Mr. Paul Cadbury, Director of Cadbury Brothers Ltd. The *Nationalized Industries* were discussed in the afternoon, Lord Citrine, chairman of the British Electricity Authority, being in the chair; the speakers were Sir John Hacking, deputy-chairman (operations) of the British Electricity Authority, and Mr. Kenneth Campbell [*A*] of the Architects' Department of the National Coal Board.

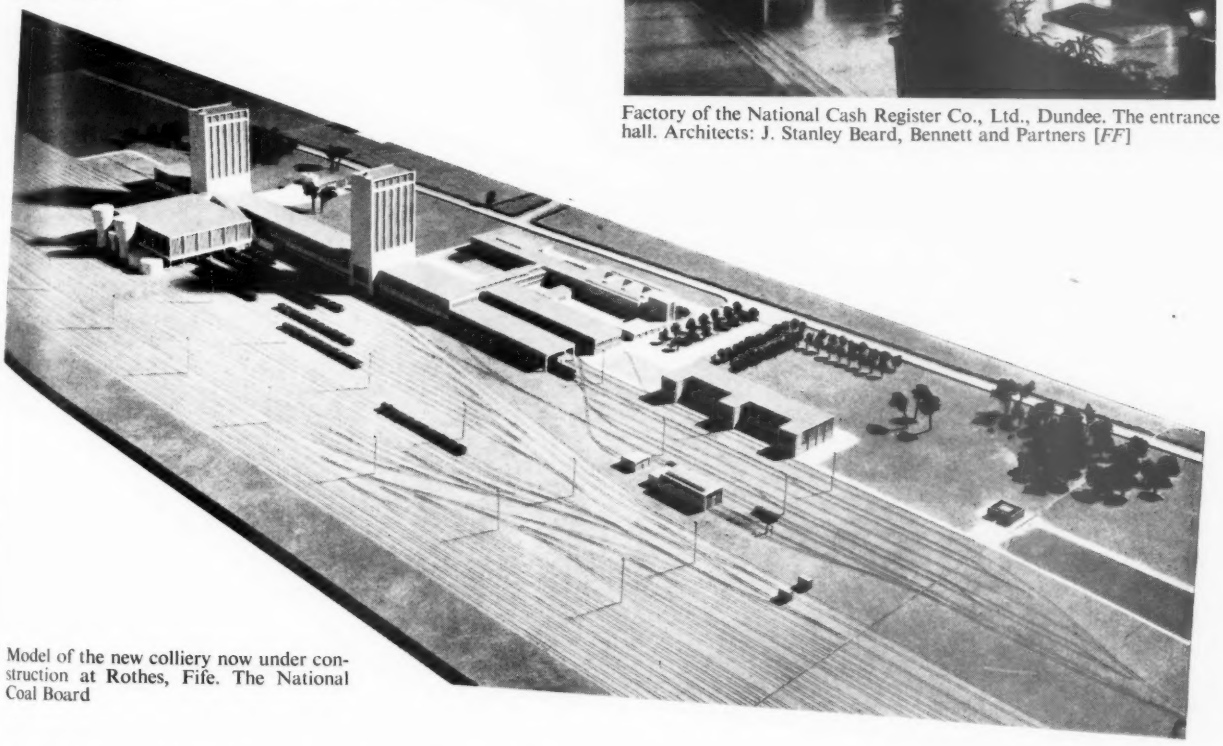
On the second morning the conference split into four groups to discuss *Structural Techniques* (Mr. W. S. Atkins, A.M.I.C.E., and Edward D. Mills [*F*]), *Heating and Ventilating* (Dr. Thomas Bedford, Mr. L. Copeland Watts, M.I.Mech.E., M.I.H.V.E., and Mr. A. G. Sutton, M.A.), *Natural and Artificial Lighting* (Mr. W. A. Allen [*A*] and Mr. R. O. Ackerley, F.I.E.S.) and *Various Factors affecting Working Conditions* (Mr. H. G. Maule, M.A., and Dr. N. Davis, M.A.). In the afternoon the conference met in full session, with the President in the chair, to hear reports from the technical groups and for a general discussion.

At the dinner on the first evening the President, after welcoming the guests, said that the conference and exhibition expressed the Royal Institute's confidence in the contribution that the profession, with its tradition of service to the community and its belief in the art and science of fine building, could offer to industry. He emphasized that industrial architecture could not be divorced from architecture in general, and further, that in architecture the practical could not be divorced from the artistic, because efficiency was the guiding principle in architecture today even if it had not always been so in the romantic past. On the question of personal relationships between architect and client he said that the client was a specialist in having his own individual knowledge of his particular needs, but he could not express them in the language of building or architecture. He was often unaware of the amount of thought and



Cardboard factory for C. Davidson and Sons, Ltd., at Dagenham Dock Industrial Estate. Architects: F. R. S. Yorke, E. Rosenberg and C. S. Mardall [*F/A*]

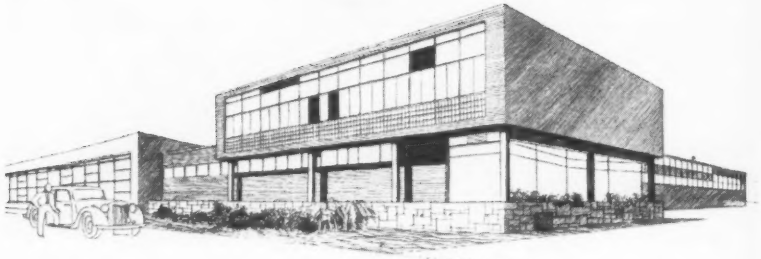
Factory of the National Cash Register Co., Ltd., Dundee. The entrance hall. Architects: J. Stanley Beard, Bennett and Partners [*FF*]

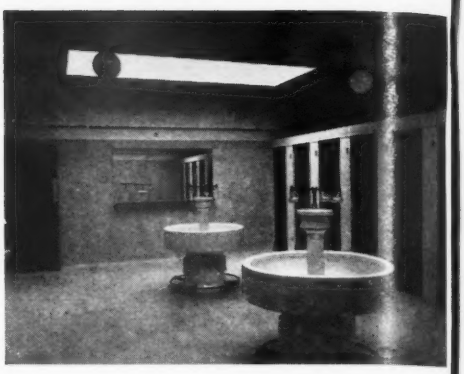


Model of the new colliery now under construction at Rothes, Fife. The National Coal Board

Above: The first building of the new strip mill for the Steel Company of Wales, Ltd., Port Talbot. Consulting Architects: Sir Percy Thomas and Son [*F/A*]

Left: U.K. Time Branch of U.S. Time Corporation, Dundee. A typical interior view. Architects: J. Stanley Beard, Bennett and Partners [*FF*]





Above: A clothing factory at Dagenham Dock Estate. Architects: F. R. S. Yorke, E. Rosenberg and C. S. Mardall [*F/A*] Right: Lavatory in the National Cash Register Factory, Dundee. Architects: J. Stanley Beard, Bennett and Partners [*FF*]

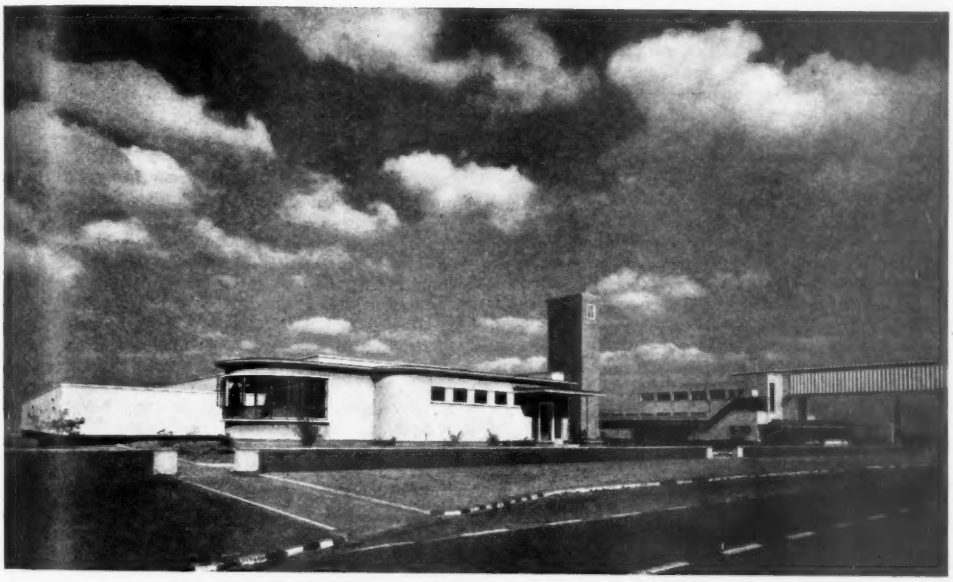
Model of the shipyard of Messrs. J. Samuel White and Co., Ltd., at Cowes. Architect: Howard V. Lobb [*F*]. The model was made to study progressive rebuilding of the yard

specialized knowledge that this required. Architects were neither dictators nor slaves, but skilful interpreters who achieved the summit of success when the client said: 'I might have designed it myself.'

Mr. H. S. Goodhart-Rendel, as chairman of the committee responsible for organizing the conference and exhibition, explained the intentions of the Royal Institute in holding them. The nation had a great programme of building and rebuilding before it and there was common agreement among industrialists and architects that our new factories could be much better than they had been in the past. It was a popular fallacy, however, that the Victorian manufacturers had been interested only in profits. The industrialists had been first in the field with housing long before it came to be regarded popularly as a national service. He instanced Saltaire as an early example and Bournville and Port Sunlight as more recent ones. Today's movement towards a more efficient and more human industrial architecture was no more than a fuller realization of responsibilities and possibilities.

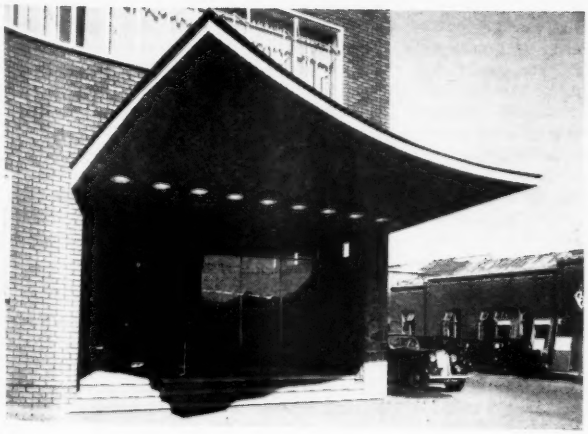
Lord Forrester thanked the Royal Institute on behalf of the guests. He emphasized that the progressive industrialist today realized the value of having the architect in a project at its beginning.

The exhibition follows in many respects the simple presentation established for *New Schools*. Each factory is illustrated by photographs and plans coloured to a scheme which emphasizes the principal units and has the flow lines of the process indicated by arrows. Many of the schemes are also shown as models. The exhibition begins with a small section on co-ordination and continues with another on landscape and siting. The examples of factories take up about half the exhibition which ends with a technical section, one on welfare and a small historical section. No attempt has been made to stage an exhibition for the uninformed layman; the exhibition is mainly technical and is intended for industrialists, engineers and architects, that is to say for those who possess considerable knowledge of the subject and who can read plans. Arrangements are under discussion for it to be shown at the Scottish Building Centre in Glasgow about the middle of May.



Above: Model of office block at Rogerstone, Mon., for the Northern Aluminium Co., Ltd. Architects: Richard Sheppard and J. Shufflebotham [*F/A*]. Left: Clock Face Colliery Baths, Lancashire. Architect: Mr. J. H. Bourne [*A*], Miners' Welfare Commission

Left below: Entrance to office block for the Bristol Aeroplane Co., Ltd. Architect: Eric Ross [*A*]. Below: The enquiry desk in the exhibition



The Town and Country Planning Act By Sir Thomas Sheepshanks,

K.C.B., K.B.E., Permanent Secretary to the Ministry of Town and Country Planning

Read before the Royal Institute of British Architects, 1 March 1949. The President in the Chair

Sir Thomas Sheepshanks: When asked to speak on 'Town and Country Planning Act,' I viewed the request with mixed feelings of honour and embarrassment. I was honoured at being asked to address your Institute. I was embarrassed, first because I recognize that the subject cannot even by the most enthusiastic be regarded as a very enthralling one, and second because I don't pretend to know every detail of the Act. I may have known it fairly well at one time, but there is a limit to what the human brain can absorb, and my brain has many other calls on its capacity. I had better make it clear that I am speaking as a layman, and that I do not regard it as within my competence to discuss purely technical points. All I can hope on this occasion is to give you a general picture of those parts of the Act with which you may be principally concerned. You have already heard Sir Malcolm Eve speak on the work of the Central Land Board—that is, broadly, Parts VI and VII of the Act dealing with Compensation and Development Charge.

Now those who read the popular press might get the impression that the main purpose of this Act is to collect as much development charge as possible at once and to postpone the payment of compensation for loss of development rights as long as we can. But the point I want to put before you as emphatically as I can is that this Act is primarily a *Planning* Act, although, of course, the Parts dealing with compensation and development charge are vital, because compensation and betterment, as you well know, have in the past been the arch bogeys that have prevented proper planning. But those parts of the Act are subsidiaries—though very important subsidiaries—to the main objective. What is that objective? It is, I submit, the best use of the land in this country in the national interest.

I will anticipate what I am going to say later. Section 5 (2) (*a*) of the Act says that a development plan shall define sites of proposed roads, public and other buildings and works, airfields, parks, pleasure grounds, nature reserves and other open spaces or allocate areas of land for use for agricultural, residential, industrial or other purposes of any class specified in the plan. There you have the whole root of the matter. Relative to the country's needs, the area of land available is small. What we have to do and what the Act seeks to help us to do is to make the best use of that land. The main object of the Act is to secure that end and the multifarious and inevitably complicated provisions of the Act should not be allowed to obscure that relatively simple issue.

Land has to be made available for the various essential needs of a great industrial nation. If we are to survive and flourish we must have land for many purposes—for housing, industry, agriculture, transport, mineral working such as coal, gravel or limestone, public recreation and—let us face it—for military purposes. It is inevitable that in these circumstances competition ensues for the same bit of land. One bit may have under it rich resources of gravel which are needed for building. But it may also be valuable market garden land or be needed for housing. Another may be beautiful open country—no particular use for agriculture—but admirable for rambling by the tired city worker. But just because it is not agricultural it may be admirably suited for military training or have valuable mineral deposits which are vital for industry. Another may be needed for housing or industry, or both combined in a New Town, yet also be valuable agricultural land. Other examples doubtless occur to you. Often one claim can not be met except by the sacrifice of another. It is the Minister's duty to try and resolve those competing claims—sometimes after a good hearty inter-departmental squabble—and try and reach the best settlement he can in the national interest. It is not just a case of a simple if controversial decision. We are not vandals. Amenity has sometimes to give place to minerals. But we do not just surrender amenity altogether. Often even when development has to be allowed, amenity can be preserved by good design of buildings or plant, by suitable conditions as to the restoration of worked land, landscaping, tree planting, and so forth.

For all this the Town and Country Planning Act is the instrument available to the Minister. The Act is a long one, ten parts, one hundred and twenty Sections, eleven Schedules, something over thirty Regulations, which put the flesh on the bare bones of the Act. Here, Mr. President, I should like by way of interpolation to tender my cordial thanks for the great help and forbearance we have received from the Royal Institute in the preparation of these Regulations. As you know, Parliament allows a greater measure of outside consultation on Regulations than is possible on the Bill itself. Very often we gave you a terribly short time to consider draft Regulations. This was not lack of consideration. It was because we felt it necessary to reduce as much as possible the uncertainty which must prevail between the passing of the Act and the Appointed Day. We appreciated very much the promptitude with which you met our requests, and I am satisfied that as a result of these consultations the Regulations are much more satisfactory than they would otherwise have been. I am going to talk only about Part II —Development Plans—and Part III—Control of Development—and the principal Regulations connected with them. Briefly there are two main purposes in the Act: (1) The provision of a framework or pattern of land use against the background of which day-to-day development can take place. This is the development plan. (2) The control of day-to-day development so as to ensure that (*a*) it does not prejudice the plan whilst in course of preparation, and (*b*) it will conform with the plan when approved.

I will deal with Part III first, i.e. control of development. Broadly the Act requires that permission must be obtained for development. What is development? It is defined comprehensively in Section 12 (2) as the 'carrying out of building, engineering, mining or other operations in, on, over or under land, or the making of any material change in the use of any buildings or other land'. Having thus started with this comprehensive definition we will try to make things easier by reconciling general requirements with practical convenience. First, Section 12 itself says that certain operations shall not be deemed development. They are set out in provisos (*a*) to (*f*) of the same sub-section.

Next there is the very important provision in section 12 (2) (*f*), which says: 'In the case of buildings or other land specified in an order made by the Minister under this section, the use thereof for any other purpose of the same class' shall not be deemed to be development. The Order made under this section is called the Use Classes Order. It sets out twenty-two classes within which a developer can change his use without the change being development. Thus Class I, which deals with shops, ensures that if anyone who has, say, a greengrocer's shop, changes it to a draper's shop or to any other shop (barring certain things like fried fish shops, which are excepted from Class I, and pin table saloons, which are excluded from the definition of shop), is not by doing so undertaking development, and therefore needs no permission, and, incidentally, pays no development charge. The Order has been misunderstood, and these points are worth mentioning: (*a*) freedom to change is only *within* each class, and not *from* any class *to* any other class; (*b*) inclusion of a number of purposes within a class (e.g. theatre, cinema, music hall—Class XIX) does not necessarily mean change from one to the other and would, but for the Order, constitute development. The question whether it would constitute development depends on whether or not it is a 'material change of use', and since this is a new term in law

which has never been construed by the courts, no one can dogmatize about it yet. All that the Order says is *if* a change from one use to another within a class would, but for the Order, be a material change of use, it is declared by the Order not to be development. (*c*) Inclusion of two uses within a class does not preclude a planning authority when giving an initial permission from imposing a condition preventing a change from one to the other. This is reasonable because it might be perfectly proper in, say, a residential area, to allow a special sort of office, but to object to it being used for general commercial purposes.

I will at this stage try to elucidate a point that is sometimes a source of confusion. For this I must make a temporary incursion into Sir Malcolm Eve's territory and refer briefly to the Order known as 'Use Classes for Third Schedule purposes'. I would remind you that Section 69 says in effect that a development charge is payable for an operation which requires planning permission. But, as with development, the Act proceeds to make exceptions, and one of the main exceptions is changes of use prescribed in the Use Classes for Third Schedule Purposes Order. All I need say at this stage is that the two Orders are identical. You may reasonably ask: Then why have two Orders? This is simple. So long as the first one, the Use Classes Order, remains unaltered the second is superfluous. But the Use Classes Order can be amended and, if this is done, the Third Schedule Order which *can not* be revoked or amended now the Appointed Day is past stands as a bulwark to protect owners. Thus, supposing for the sake of example that Class II of the Use Classes Order—use as an office for any purpose—were abolished, an owner of property which was used as an office on the Appointed Day could still change it to any other sort of office without development charge. It is true he might have to get planning permission, but if it were refused he would be entitled to compensation.

I have shown that by the Act and Use Classes Order certain things are not development at all and do not therefore need permission. Apart, however, from exemption for some miscellaneous temporary uses (you will find them in Subsection 5 of Section 12) the main additional relief to developers is found in the General Development Order. This says that the operations set out in the First Schedule to the Order are permitted development, i.e. that there is no need to go to the planning authority for special permission for them. Permission is given by the Order itself. The Schedule of permitted development in the G.D.O. tries to strike a balance between a necessary degree of planning control and reasonable freedom for developers' small day-to-day operations. There are many more types of permitted development than in previous Orders. The Schedule can be modified—has in fact already been modified in minor points. Planning authorities can (with the Minister's approval) make directions under the Order restricting permitted development of particular classes or in particular areas. That is a necessary safeguard. Besides setting out classes of 'permitted development' the Order also lays down procedure for various aspects of planning control, such as acknowledgment of applications, appeals, register of applications, and, by a recent amending Order, procedure for getting determinations under Section 17, which I shall say more about presently.

The General Development Order, like the Use Classes Order, has its 'twin', but whereas in the first case the twins are identical, in this case they are not. In this case the twin is called the Exemption from Development Charge Regulations. On this, I need only say that not all 'permitted development' is exempt from development charge. Take, for example, development authorized by local or private Acts. It is logical enough that it should be permitted because the planning aspects will have been considered when the Bill was before Parliament and need not be considered again by the planning authority. But it does not follow from this that it ought to be exempt from charge. Conversely, the enlargement of a building by not more than one-tenth or, in the case of a dwelling-house 1,750 cubic feet (whichever is greater), is exempt from charge but, on sound planning grounds, *not* automatically 'permitted development'. Permission has to be obtained in the ordinary way. These differences are not arbitrary—they have a sound logical basis

In spite of all we have tried to do it is not always easy for a man to know whether what he proposes to do is development. Indeed, the very fact that we have eased things by saying that some things are exempt and some are permitted has added to the complication. It is therefore necessary to have a means by which the developer can find out as quickly and simply as possible whether he needs to get permission or not. This is provided for in Section 17, which enables a developer to ask local planning authorities for a determination whether what he proposes to do is development under the Act, enabling anyone in doubt to get the matter determined before going ahead with any plans or details. Procedure for determinations has been recently laid down in an amendment to the General Development Order. The developer applies *in writing* to the local planning authority describing what he intends to do. (No *plans* are necessary at this stage.) The authority must reply within two months, in writing, stating the grounds on which decision has been reached. If the developer feels himself aggrieved he may appeal to the Minister within one month. The Minister thought it justifiable to anticipate things a bit, and has given local planning authorities some general advice in Circular 67, so far as he can properly do so having regard to his appellate jurisdiction. I will give you the gist of paragraph 4 (iii) because it is important. The significance of the words 'material change of use' is explained here in the definition of development. The comparable definition in the 1932 Act talked of a change to a use for a purpose which was *different* from the existing use. The introduction of the word 'material' in the 1947 Act means that the new use must not be just 'different' but *really* different. Changes of kind, for instance, from house to shop or shop to factory would be material. Changes of degree might not be. And here we have risked giving our ruling on one or two classes of case. Lodgers, for instance. If you took in one or two lodgers in your own house it would not be a material change. But a change from a private house to a declared boarding house would be material. Similarly, if a doctor uses one or two rooms in his private house for consulting rooms it would not be a material change. If he converted the house into suites of consulting rooms it would be.

So much for what is development and main classes of permitted development. How is the control administered? Powers of day-to-day control vest in the new planning authorities the Councils of Counties and County Boroughs. This change in England and Wales has brought the number of separate planning authorities down from about 1,450 to about 145. At the same time excessive centralization is avoided, and the experience and knowledge of district councils preserved by provision for delegating powers of control. The Minister's policy has been to urge as generous a measure of delegation or decentralization as is possible, subject to the important proviso that prejudice to the main county plan must be avoided. When the development plans are approved he hopes to be able to give a still larger measure of delegation. It has largely been left to the local authorities to agree locally on the measures to be adopted. They have taken one of two forms. Either delegation to individual District Councils with a reserve power to the County Councils to have submitted to it any proposal which seems to raise a major issue. Or alternatively decentralization to Area Committees consisting of representatives of the County Councils and the District Councils and, usually, with the District Councils in the majority.

I recognize that it may be some inconvenience to professional men acting for clients not to know exactly what the arrangements are and to find that they vary from county to county, but the Minister's view was that the main thing was to get the local authorities, as far as he could, to agree on what was most convenient to their own circumstances.

I refer now to the method of making applications, and how they are dealt with. I must admit that the Act does involve a lot of work and form-filling for developers and their professional advisers. The Minister has always been anxious to reduce this work to a minimum and he was particularly keen to have one combined form of application for bye-law approval, for planning consent and determination of development charge. We had prolonged discussion with local authorities and other government departments, and, I assure you, strove very hard to achieve this object, but with the best will in the world we have

so far been defeated though we have not yet given up hope. What we have done under the Making of Application Regulations, is to secure that the developer can go to the office of the District Council—which, after all, is usually the one nearest to him, and the one to which he is accustomed to go for bye-law applications—and get all the necessary forms for all these purposes. And he can send in all his forms, when completed, to the District Council. They pass on the planning application to the planning authority when they have not delegated powers to deal with it themselves.

If the development charge application is also sent to the District Council they send it on to the Central Land Board after planning permission has been granted with a statement of the conditions on which the permission was given. Alternatively the developer can send it straight to the Board.

The number of plans and forms is limited by Regulations to four and we have urged the local authorities to reduce this number. It is only fair to add that some local authorities have felt that a lesser number would not help the developer since it would mean delay in dealing with his application. Planning authorities have two months in which to decide an application—three if the application concerns a trunk road. This sounds a long time, and it is, but many are dealt with in less time, and after all there are many interests who may have to be consulted. If no answer is given within two months permission is deemed to have been refused. If permission is refused—either outright or deemed—there is an appeal to the Minister. The volume of appeal work is very large. Appeals are running at the moment at the rate of well over 400 a month—that is a figure which may surprise our Scottish friends. It is, incidentally, exclusive of appeals under the Advertisement Regulations. There are bound to be a lot of appeals. At the same time no one wants a case to come to appeal unnecessarily. As you may know we issue a quarterly bulletin of selected appeal decisions. We understand it is generally welcomed, and we hope thus to build up a body of case law which may help to reduce appeals. You, too, may be able to help. It may be that an application by one of your clients is refused. If instead of taking the matter straight to appeal, you discuss it with the local authority you may be able to reach some compromise or alternative solution which would obviate the need for an appeal. It means more work it is true, but surely less than would be involved in an appeal. Generally, the Minister is anxious that local authorities when considering individual applications should take the line that it is their duty to help good development not hinder it, and that they should view an application rather with the idea of helping it to proceed and of fitting it into their plans rather than that they should approach it in a hostile spirit of negative criticism.

Now I will deal with Part II—preparation and content of development plans. The Act requires the new planning authorities, as one of their major functions, to prepare and submit to the Minister for approval, a development plan of their areas within three years of the appointed day. The plan, which will be based on a survey, will contain, in outline, their proposals for allocation of land in their areas—for housing, roads, open space, industry, business quarters, agriculture, mineral working, etc.; it will supply a framework against which the long-term development and re-development, which in most areas are crying out to be done, can take place; but it will be more flexible than the old operative schemes, under the Act of 1932, and, by provision for keeping survey up to date and for revision of the plan every five years, designed to be kept under constant review. The plan also gives the citizen a fair presumption whether he is likely to get planning permission in a given area, and warns him that certain land will be needed in order to carry out the plan.

This warning is conveyed by *designation of land* as subject to compulsory acquisition—a necessary procedure if authorities are to make realistic plans, and the successor to declaratory orders under the 1944 Act. Designation does not imply that the land will necessarily be acquired, and if no purchase is likely to take place within ten years (or seven in the case of agricultural land), the Minister is precluded from approving the designation. On the other hand, the plan as a whole is not confined to proposals for the next ten years; it can indicate general proposals which will take longer (not normally beyond about twenty years), but it cannot *designate* more land than the authority are likely to acquire in that time. Special importance is attached to 'programming'. The Act itself lays down that the plan must show 'steps by which any such development should be carried out'. The three classes of land which may be designated are: (*a*) land likely to be acquired by any Minister, local authority or statutory undertaker; (*b*) land in or associated with an 'area of comprehensive development', i.e. an area which, in the opinion of the planning authority, should be developed or redeveloped *as a whole*. Such areas may include, for example, war damage, obsolete development (slums, coastal shack development, etc.) or land needed for housing overspill; (*c*) any other land in order to secure the purpose to which it is allocated in the plan. As I have said, designation is a mechanism to enable authorities to plan realistically and show stages by which plans are to be carried out. It also gives a landowner a measure of warning and saves him from spending money unnecessarily on land and then having it acquired 'out of the blue'. On the other hand, it may admittedly discourage him from spending money on his land at all, so that it deteriorates. No method of acquisition is without its disadvantages.

I have said that a plan will be based on a survey. This survey of the whole of planning authorities' areas will be more comprehensive than anything before attempted. A report of the survey must be submitted with the plan. It is realized that the work will be considerable, especially as trained planning staff is scarce and as a good deal of the information will have to be supplied by central government. You may be interested to know that survey will include age and condition of buildings on 6-inch maps for all town areas, showing buildings under these heads: (*a*) extensively war-damaged; (*b*) condemned, or scheduled for demolition under Housing Acts if demolition were immediately practicable; (*c*) of architectural or historical interest; (*d*) all others, classified by age.

We have given the local authorities some rather voluminous ideas about the information they need to collect for the purposes of their survey.

It looks a very formidable demand, but we believe that information broadly on the lines suggested is wanted if they are to do their job properly. Obviously, however, some flexibility is needed in the application of these recommendations to particular circumstances. But we do refute any idea that good planning is possible without a background of adequate statistical information. For example, there have been cases under our 1944 Act where no reasonable survey of needs was made and where proposals for shopping facilities were put forward which in our judgment were vastly in excess of what would ever be required. I need not elaborate the serious financial effects of such errors.

The development plan itself will consist broadly of a basic map and such subsidiary maps as are needed, and a written statement of main proposals, with such matter as is necessary to illustrate them. The proposals to be shown on basic maps will indicate the broad basis of planning authorities' intentions rather than settle exact lines of future development. It is hoped by this the rigidity of the 1932 Act schemes will be avoided. It has been suggested to planning authorities that they should limit themselves to fairly firm proposals, and not include them unless there is a fair chance of their being carried out within about twenty years. Obviously the preparation of plans will involve a large amount of consultation, and the Act places a statutory obligation on County Councils to consult any District Council whose area is affected before preparing the plan, and to give the District Council a chance of making representations before submitting it. Planning authorities are urged to consult with their neighbours, particularly on the fringes of built-up areas which cross administrative boundaries and with statutory undertakers, trade associations and local interests generally. Such consultation is vital for the plans of County Boroughs.

Dealing with the individual and the development plan, what say has the citizen in all this? The Act provides (by regulation) that the submission of a plan to the Minister shall be advertised in local papers, and that the Minister shall consider objections and representations within a specified period, and if he thinks necessary shall hold a public inquiry or hearing. A notice of approval of the plan by the Minister must

also be advertised, and copies of the plan must be available to the public and must be exhibited before submission. This completes the review of planning control and development plans.

Lastly, I will briefly suggest the principal ways in which the Act affects the architect in the exercise of his craft. Clearly a high general standard of architecture is essential to good planning. But you can not produce good architecture by legislation. The most, I suppose, you can achieve is to discourage bad, to try to ensure conditions which encourage architects to do good work, and to have a reserve power which, with all proper discretion, can be used against the vandal and the anti-social developer. The Act ought to help in these respects. First, the transfer of planning functions to County Councils with their stronger resources and professional staffs ought to make it easier to secure higher standards locally. Secondly, the Act gives local planning authorities the chance to carry out redevelopment projects as a whole—and some of these projects will be very big. This in turn will call for a sense of civic design and architectural unity which is one of the things that the planner may reasonably expect. There will, in fact, be greater need and greater opportunity to regard a building not in isolation but in relation to its neighbours, and to make sure that it fits in with its surroundings. Thirdly, the Act attaches importance to control of design and external appearance. Anything 'materially affecting' the external appearance of buildings is development. The previous powers of preserving buildings of architectural and historic interest are re-enacted and strengthened. I would not attempt any detailed description of how we should all go to work under this head because obviously when you come to what is fundamentally a question of æsthetic taste you have got to be very careful about how you proceed. In some places conformity with general character may be necessary, and in a few exceptional cases a very strict standard may be desirable. But elsewhere it seems largely a matter of education and example. You can not dictate taste by Act of Parliament.

I do not pretend that the Act is an easy one either to understand or administer; we are fully aware that it will involve a great deal of work for hard-pressed local authority staffs and professional men like yourselves; we are prepared for some teething troubles in the period of transition from the old system to the new, especially when shortage of materials, labour and trained staff is acute. But the problem which the Act tackles is enormous and infinitely complicated—the legacy of a hundred and fifty years happy-go-lucky industrial spread, urban sprawl and unbalance between agriculture and industry. I ask those of you who are officers of local authorities to show common sense and discretion and sympathy in handling cases; those who are private architects to show tolerance and good temper, especially in the first rather awkward years. The Minister is fully aware that the Act is not perfect in detail, but as a whole it is a great experiment and needs working as such, and the architectural profession is one of the bodies clearly most able to contribute to its successful outcome.

ANSWERS TO WRITTEN QUESTIONS

Q. Article 2 of the Making of Applications Regulations provides that an application for planning consent shall be accompanied by such plans and drawings as may be required by the local planning authority. Can the authority under the Regulations require anything more than sketch drawings, and is there any case in which the authority would be entitled to require working drawings?

A. Under the Regulations the authority can require working drawings if they want to do so. We felt bound to leave it to them to ask for what they thought necessary in their own circumstances. The Minister has in fact asked authorities to be as moderate as they can, and he made quite a number of suggestions in a circular,—Circular 45; but, when all is said and done, those are only suggestions, and they are not enforceable on the local authorities. Perhaps the one exception is that those Regulations do specifically provide that, where the local planning authority considers it adequate for their purpose, a plan sufficient to identify the land should be enough.

Q. Premises in one occupation for one business are occupied as shops, showrooms, workshops, store rooms and offices, all in connection with the business. If a store room is changed to use as a workshop is this a material change of use requiring permission under the Act?

A. It would not be a material change. It is governed by Article 3 (3) of the Use Classes Order, but I am not going to read that to you, because at first reading it is not very easy to follow; but, foreseeing that, we paraphrased it in a memorandum on the Use Classes Order, and I will read that, because it is intelligible. It says: 'Ancillary uses are regarded as included within main uses. Thus, in a building the existing use of which is, say, a general industrial building or shop, it is assumed, unless conditions to the contrary have been imposed, that any part of that building can, without application for planning permission or liability for development charge, be used as an office or as a staff recreation room or for storage accommodation'. That means that the making of minor changes and readjustments in ancillary uses, as from a store room to a workshop, is not development.

Q. Is a local authority empowered to arbitrate in the matter of conformity with existing architectural character where it can be reasonably established that the desirable character exists? Thus, when reaching a decision on a definite proposal is amenity invariably taken into account? If not, then in a case where private individuals are of opinion that an existing amenity is threatened, have they any means of representation before the local planning authority?

A. I think that the answer is this, that the extent to which a proposed building ought to conform with existing architectural character is most certainly one of the matters which a local authority ought to take into account in deciding applications for planning permission, but I do not think that 'arbitration' is the right word. It is simply that architectural harmony is one of the aspects which the planning authority most certainly ought to take into account, and amenity, again, is clearly something to which they must always have regard. The question is also raised of whether, if private individuals are of opinion that an existing amenity is threatened, they have any means of representation before the local planning authority. Strictly, the answer is No. After all, if the planning authority gives a consent there is no third party right of appeal. However, in fact, as far as I know, local authorities have always been willing to have regard to representations that are made before giving a decision, and when there is an appeal we have always been ready to hear them, although there is no strict statutory basis for allowing third parties to take part.

Q. What is 'material change to the external appearance of a building'? Is a new shop front material change to the external appearance of a building? Would the fixing of a new fascia shop sign be considered material change?

A. I think that the answer to the first question, namely, whether I can define what is material change, must be the same as that of the man who said that he could not define an elephant, but he knew one when he saw it. I am not going to try to define it, but when you have the actual facts before you it is not very difficult.

The question of whether a new shop front is a material change to the external appearance of a building is covered, I think, by what I have said; it is all a question of degree. If you are just replacing an old shop front with a similar new one, making a few minor improvements, probably it is not; if you are knocking out an old bow-window and replacing it with modern plate glass twice the size, and so on, I think that clearly there is material change. I am glad that the last question, with regard to the new fascia shop sign, has been asked, because it is one of the things which I always try to remember and never can. I have had to refresh my memory on that. If it is something actually engraved on stone on the building, that is controlled under external design; but if it is a shop sign, as I gather the questioner means, that is governed by the special provisions of the Control of Advertisement Regulations. The principle there is that there are general provisions relating to the control of advertisements and special provisions for a tighter control in areas of special control. In both areas a new shop sign can be erected without the need for permission under the Advertisement Regulations, provided that it conforms with certain requirements which are set out in Regulation 12 of the Regulations. They vary according to whether it is an area of special control or not. In an area of special control there is stricter limitation

of the size of the lettering, the height and so on.

Q. Section 13 (3) (*a*) of the Act provides that where permission is granted for the erection or alteration of any buildings, the development order may 'require the approval of the local planning authority to be obtained with respect to the design or external appearance thereof.'

(1) Does the Act or any Regulation or Order under the Act require the authority to take expert advice in deciding whether or not to give such approval?

(2) If so, what professional qualifications are required of a person whose advice is to be regarded as expert?

(3) Would the advice of a chartered architect be regarded as expert?

(4) If so, where a local authority on the advice of an architect disapproves of the design of another architect, is the opinion of the architect advising the authority to be regarded *ipso facto* as the more expert?

(5) Section 16 (4) provides for an appeal against such a refusal to be made to an independent tribunal established in accordance with the provisions of the development order. In the event of the design objected to being the joint work of, say, three architects, is the opinion of the tribunal to be regarded *ipso facto* as being more expert than that of the three architects?

If I were the Minister and answering that in Parliament, I should say: 'The answer to the first part is "No, Sir," and the answers to the second, third and fourth parts do not arise.' The point is that there is no requirement in the Act or in the Regulations that the authority must take expert advice. It is fair to say, however, that, while there is no legal requirement, the Minister has always emphasized the importance to be attached to the external appearance of buildings, and in one early circular planning authorities were advised, when handling this sort of question, to avail themselves of expert architectural advice.

With regard to part (5) of the question, I propose to dodge it, and shall merely say that it is true that Section 16 (4) does provide for a special tribunal to be set up to decide on appeals dealing with questions of external design and appearance, but that was put in as a reserve power. There may be occasions when the Minister may feel it right to set up such a tribunal, but in fact he has not done so up to now, and appeals on questions of design and external appearance come to the Minister in the same way as other appeals. If a tribunal were set up its decision would be final, just as the Minister's decisions are final.

VERBAL QUESTIONS AND ANSWERS

Q. I understand you to say that for domestic property the development of up to 1,750 cubic feet will be permitted without payment of development charge. Would that 1,750 cubic feet include a garage, or must it be limited to habitable rooms? If the development exceeds 1,750 cubic feet, is the amount of the development charge based on the amount by which the development exceeds 1,750 cubic feet or on the total amount of development?

A. You are getting me on to matters which are not my business, but I can answer that. The 1,750 cubic feet would include a garage, and, if you exceeded it, the charge would relate only to the excess over the 1,750 cubic feet.

Q. Where a local planning authority has prepared a scheme for the development of a residential area, what rights have the residents of the area to be developed to study the plans which have been prepared by the authority? Have they any rights not only to look at a model or to glance at a plan but really to study it in detail, and perhaps form a residents' committee to discuss the plan in detail with the planning authority.

A. There is provision that proposals have to be on view at all reasonable hours at the local authority office, so that there is every opportunity for interested people to spend as much time as they like in studying the plans. In those circumstances there is not the least doubt that the local authority would be willing to discuss the matter with interested people. They would be very foolish indeed if they did not.

Q. I am very much concerned with the control of elevations in respect of one of the county authorities. I understood Sir Thomas to say that this question of the control of design had to be taken into account, and the county authority to which I refer has decided to include it in its scheme. We have been working on it now for the last seven months, under the recent Act. An authority not far from us has, recently decided that it is not going to include the general criticism of the architectural elevations of buildings in its area. The authority which I am serving has taken the Minister's advice, and is being advised by panels of practising architects, who are advising the area planning committees under central county control. I happen to be the secretary of the panel organization, as well as chairman of the county panel, which is composed of the chairmen of the area panels. That organization seems to be giving satisfactory results. There was an attempt the other day to get this decision overruled. I was invited to attend the committee, and, after discussion, a resolution was passed expressing satisfaction with the work of the panels.

What I want to put to Sir Thomas is this: Am I right in thinking that it is possible for an authority not to include this control in its scheme? Also, if it has approved of dealing in its scheme with the elevations of buildings (with, I assume, the approval of the Ministry), is it then possible for that authority to rescind that decision, and seek the Ministry's approval for its omission?

'It would be helpful to me to obtain an answer on that point, because I am also associated with and a member of the Central Panels Committee set up by the R.I.B.A. and the C.P.R.E., and it is a point which is engaging our attention there.

In my own area it is felt that some advantage is resulting from the work which is being done under the Act, but there are practical difficulties. One which I should like to mention is this. A panel is asked to advise the authority on whether schemes should be approved or disapproved, and also on whether they should be approved with conditions; and this gives rise to practical difficulty, because the legal fraternity have ruled that where conditions are suggested by the panel and adopted by the authority they must be entered on the land registry. That involves an immense amount of work and is likely to lead to trouble.

A. I am not certain that I follow exactly what the questioner has in mind, but I can be quite emphatic that if a planning authority disregards questions of design and appearance they are failing in their statutory duty. The machinery by which they should do it, however, is a different matter. As I have told you, we have in a circular exhorted the authorities to fortify themselves with proper professional advice, but it is inherent, I think, in a system of working through local authorities that you have to leave it to them to decide how they do it; so that while I say definitely that it is the duty of any planning authority to concern themselves with design and external appearance, the method by which they do it is a matter for them. We should not come in except on one point, and I am not positive that I am right in this. In the case of a county, which can delegate powers, we have some control over the arrangements which they make. It might be possible, I suppose, in a case of that kind, if we were satisfied that the delegation arrangements were entirely unsatisfactory, to exercise some control there; but broadly this is something which we felt it right to leave to the local authorities. I repeat, however, that it is their duty—they have no option in the matter—to apply their minds to design and external appearance.

Q. My experience has been that in Central London areas the planning authorities are attempting to impose the onus for providing car parking space for vehicles on individual owners. Is that merely a directive, or is it contained in any regulations? It is a very important matter. Apparently in future when we develop large sites in Central London we shall have to segregate a portion of the site for the parking of cars, and it will be a considerable onus on developers if that is so.

A. In parliamentary phraseology, I shall have to ask for notice of that question. I should like to consider it and reply in writing.

VOTE OF THANKS

Mr. R. J. Gardner-Medwin, moving a vote of thanks: This new Planning Act, for all the bewilderment that it causes amongst ourselves and our clients, is, I think, a very popular Act with most members of the R.I.B.A. In fact, I think that the Institute feels to no small extent responsible for this Act, because for many years architects have urged the necessity for, and even agitated for, the nation-wide, compre-

hensive planning of town and country which Sir Thomas has been describing to us. However, because this Act has provided us with what we asked for it does not necessarily follow that we understand its provisions; and after listening to this paper most of us will go away with a much clearer understanding of the legal and administrative interpretation of our desires.

I think the Act may well be described as a 'free planning' Act, though this is a phrase which will be better understood by architects than by landowners; to landowners the provisions of the Act may seem anything but free. To the architect, however, it means that we are technically free to plan and design on sound principles of space and light and safety and health, which have the backing of the Minister of Town and Country Planning and, I need hardly add, of the Secretary of State for Scotland.

There is, however, a danger in the operation of this Act which is feared by all the members of our Town and Country Planning Committee. Sir Thomas has mentioned the making of development plans, and has said that under this Act it is possible to provide architects with decent surroundings in which to show their skill; but what part are the architects themselves to play in shaping these surroundings? None of us will have any hesitation in leaving the problem of the outline plan for the region, the county or the town to the specialized technique of the planner, but the problem of the detailed development plan, the organization of building units in relation to the topography, the streets and open spaces—this is architecture in the large, or, as Sir Thomas calls it, civic design. What about this part of the development?

The principles of planning central areas, for example, are intimately associated with the principles of architecture; and incidentally the Ministry's Handbook, an excellent document, is a very good example of this. It is important, therefore, that the architect should be in at the start on detailed area development planning, and not simply be called in to solve some individual building problem after the setting has been predetermined for him by the planner, to apply, as it were, the architectural icing on top of a cake baked according to the planner's cookery book.

In Bath, in Dublin, in Bloomsbury, in Edinburgh, in Washington and in New Delhi, visual planning, meaning architecture, was the most important consideration. Today, the designer's approach has to be different. It is of primary importance to provide safe and efficient traffic flow, modern social facilities and standards of life, and so on, and these necessities influence the architect and in fact inspire him to view the problem of visual planning in a new light.

There is a greater freedom for the designer today than there was in the formal days of the Renaissance and the latter-day Renaissance, but my fear is that this freedom, if we are not careful, will be abused by the mechanical application of law and code and technique. I believe the Ministry of Town and Country Planning in this country, and the Department of Health in Scotland, are well aware of this danger, and I hope that their administrative staffs will support us in getting across to the local authorities the fundamental part of the architect in the initial stages of detailed development planning. From what Sir Thomas has said, particularly in answering some of the questions put to him, I think it is clear that he is sympathetic to our cause, and that is why I take pleasure in proposing a most hearty vote of thanks to him for coming here tonight and so ably expounding to us some of the mysteries of this great Act, which we believe brings us a new freedom.

Mr. Peter Shepheard: I am very glad that Mr. Gardner-Medwin began by emphasizing the welcome which all architects should give to the Town and Country Planning Act. At the time when the Act was passed, I myself was a very minor cog in the Ministry of Town and Country Planning, and I remember that all of us there felt rather like people who had been shoving like mad to remove some great obstacle, and then it suddenly moves and everybody falls down flat and wonders what happens next.

I think that that has happened to some extent to architects in general. We have wanted the Act for a long time, and now we have obtained it we are a little afraid of it and do not know what the next step is. I think a good deal of this feeling is inspired by the fact that it is a very complicated measure. Its wording is complicated; but, although I am one of those who do not believe that it is necessary to have Acts of Parliament worded in the way they are, I am persuaded that it is not necessarily the complication of the wording of an Act that makes it a complicated measure to work in practice; I think that very likely the way the Act is worded will make it a simpler one, and I was glad to hear Sir Thomas emphasize several times the words 'common sense', because it is astonishing how much this Act is based on common sense. When asked some question by an aggrieved developer, the Minister, I think, can fairly reply, 'Use your common sense, and I will use mine'.

I think the most important problem for us is that of the architect's position in planning. Mr. Gardner-Medwin has well said that we are all part of a team, and that in the final stages of planning we hold the key position; but it is a key, not a battering-ram. It is important that architects should make their own estimate of what their function is, and then go all out to persuade everyone to let them fulfil it. In view of the fact that architects are now well trained, and are above all trained in logical and orderly thinking, they must not be tempted to believe they can do everything. Unless the architect sticks to his last, the production of good buildings, he will find himself left out of the rightful place which he should occupy in planning.

I should like to see more architects work for a time for the Ministry of Town and Country Planning, because, when I was there, whatever I was able to do for them, they did a great deal more for me in teaching me what a lot of effort there must be on the other side of planning. One's own section of it, as a private practising architect, is bound to look exasperating; one's own case always seems so important; but, having seen the other side working, I am astonished at the amount of effort that goes to applying common sense to each problem as it comes up. The essence of planning is balance; one man will gain something and another lose; and therefore we must be prepared to put up with a feeling of being aggrieved for the sake of the general good.

We must apply ourselves to the problem of architectural control. Most people who talk about it fail to realize that there are several different problems. It is very easy, particularly for a layman, to imagine that to arbitrate in matters of taste is simple, and that all that one has to do is to say that in such-and-such a locality such-and-such an elevation is desirable, and that is that. I am not very old, but I have seen enough of the turn of the wheel of fashion to realize that its orbit is a very narrow one, and it goes whizzing round a great deal faster than in a generation. I should hate to lay down, as a planning officer, any sort of arbitration in matters of taste and guarantee that that would be regarded as right in even ten years' time. The essence of the control problem, of course, is that the control of architecture in large schemes to produce civic design—which is the term which Sir Thomas uses, and I think that it is an excellent one—is obviously necessary; and the Act—including the recommendations on daylighting, which, however they are criticized, are good recommendations—does provide an instrument by which that sort of control, what I call the creative control of design, can take place, by which one controlling architect or group of architects will design a central area in an all-embracing but very vague way, so that other architects will find themselves benefited by their provisions and will find their own programmes more worthy of completion as part of a whole.

With regard, however, to the other kind of control, the control of individual design in rural areas and on the outskirts of towns, apart from large schemes, I myself cannot see that any form of control will produce any more than an alleviation of the worst forms of vulgarity, at the same time providing a hindrance to the most adventurous forms of modern design; and I feel that it is worth having the vulgarity if we can also have, at the other end of the scale, the adventurous forms of modern design.

The basic difficulty is that you cannot have people sitting in the offices of local authorities controlling other people's designs who are good enough for the job. If a man knows enough about design to criticize the designs of other architects he ought to be doing the work himself, and he will not be found either on a panel or in a local authority's office unless he is a very disinterested person.

The Use of Steel in Building

The Minister of Works announces programme for further economy

THE MINISTER OF WORKS, in a Press conference held at Lambeth Bridge House on 24 February, announced a programme for further economies in the use of steel This, he said, was to be a real drive for the more efficient use of steel. It was possible to save 10 or 12 per cent of the amount of steel required on steel framed buildings. Wherever steel was used for constructional purposes we had got to work to higher standards of performance. This was essentially a matter for the designer and to further this new steel technique he had recently appointed a committee called the 'Professional Institutions Committee on Improved Methods of Steel Utilization' of which the chairman was Dr. David Anderson, the eminent engineer. (The Council of the R.I.B.A. have appointed Mr. Mark Hartland Thomas [*F*], chairman of the Architectural Science Board, to represent the R.I.B.A. on this committee.) In answer to a question, the Minister said that this was no mere temporary drive to economize steel but amounted to the initiation of a new technique of steelwork design which would be permanent.

A summary of the main recommendations by the existing Steel Economy Committee of the Ministry was issued at the Press conference and the following are some extracts from it:

'**Building Rules and Regulations**. The adoption is recommended, wherever possible, of the new design specifications for steel and reinforced concrete both for work done to the orders of Government Departments and the socialized industries, and also by manufacturing industries. To this end it was decided that all construction involving the use of more than 25 tons of steel and licensed by the Ministry of Works must, wherever possible, comply with the new British Standard Specification 449 relating to Structural Steel (which, *inter alia*, increases the basic permissible stress from 8 to 9 tons per square inch and the flexural stress to 10 tons per square inch) and the Codes of Practice 113 and 114 relating respectively to Structural Steel and Reinforced Concrete, or an acceptable explanation given why this has not been done. In addition the Ministry of Works circularized all Departments advising them of the new Standard and of the two new Codes of Practice. Ministry of Health have also informed local authorities of the revised standard and have asked them to adopt it as their present guide in administering bye-laws. It is generally agreed that existing stocks of steel ordered to the old B.S. 15 may be used with safety under the new B.S. 449 and the use of such stocks is, therefore, urged '.

The report then emphasized the great importance of welding as a method of economizing in steel usage and quoted as cases of economy a saving of from 14 to 16 per cent in steel frame buildings and from 15 to 20 per cent in plate girders, built-up columns, roof structures and lattice girders.

High tensile structural steels had been in recent years the subject of a great deal of research. The permissible working stress for high tensile steels of 13½ or 15 tons per square inch as against 10 tons for mild steel reflected the theoretical saving. In practice the saving varied between 15 per cent and 25 per cent and there was also an appreciable saving in cost of steel. During the war high tensile steel had been used very effectively for Bailey Bridge components.

The committee's report continued:

'**Cold Formed Steel Sections.** The Cold Formed Steel Section of the industry is practically new. Cold formed sections are used in the manufacture of a variety of constructions, and whilst a great range of standard products are produced, such as angles, tees and channel sections which are much lighter than the normal hot rolled sections, the industry also specializes in purpose-made sections.

Its products fall into two main categories: (*a*) cold formed sections for use in many branches of manufacturing industry, such as railway carriages, motor cars, steel office furniture, etc., and (*b*) cold formed sections for general building construction. Further development of (*a*) is important from a steel economy point of view, and also from the point of view of improved production methods for both home and export trade. Further development of (*b*) will be important in building up a new export trade in building and housing components. Use of cold formed steel sections results in steel economies of from 30 per cent over the heavier hot rolled sections.

At present the full capacity of the industry is not being used due to other demands upon cold and hot rolled strip, and to improve the supply position arrangements have been made for a bulk authorization of strip to the producers of cold formed sections to enable them to manufacture a reasonable quantity of stock from which deliveries could be made to replace the use otherwise of heavier hot rolled sections obtainable from stock.

To furnish evidence of the value of these new products this Ministry, in accordance with the recommendations of the Committee is initiating suitable prototype work in connection with beams and rafters and roof trusses for building constructions using cold formed steel sections. The actual erection work will be carried out by the building industry itself under the supervision of the Ministry of Works '.

'**Reinforced Concrete Construction.** In reinforced concrete work where high tensile steels are used in tension, the economies in weight amount to as much as 30 per cent in favourable circumstances. The possibilities of securing further economies in steel reinforcement have been examined by the Steel Economy Committee in relation to higher working stresses for mild steel bars. Also the problems of shuttering materials and methods, which at present are setting a limit to concrete construction, have been examined.

There are fields of reinforced concrete construction where British Standard mild steel could be used to better advantage, especially in precast products subject to factory controlled operations, and also where cracking is of minor significance, and the Committee have asked that consideration be given to this and any other matters which would lead to a more economical use of reinforcement steels.

With regard to the more extensive use of medium tensile, high tensile and cold worked high yield-point steels, their use is to some extent restricted by supplies, as designers hesitate to base their plans on these qualities of steel owing to the prospect of having to re-design their work through lack of supplies. The Steel Economy Committee is continuing its consideration on these points'.

'**Pre-Stressed Concrete.** Pre-stressed concrete is generally recognized as having great potentialities. It is based on the use of high tensile steel wires, with an ultimate breaking strength from 100-140 tons per square inch, which are tensioned in such a way during manufacture of the units as to put compressive stresses into the tension zones of the concrete units, so overcoming the well-known weakness of concrete to withstand tensile forces'.

'In this country good progress in this form of construction has been made on concrete railway sleepers and a start has been made on girder bridges, transmission line and telegraph poles and single and multi-storeyed buildings for factory, office and storage purposes.'

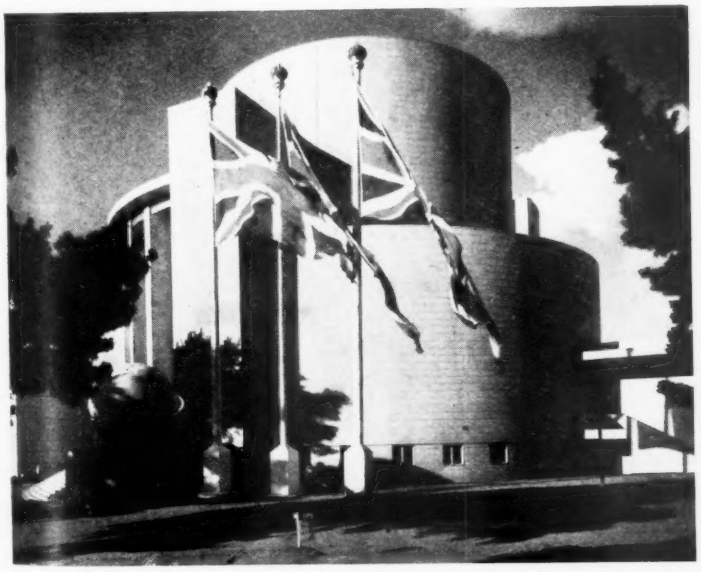
'The supply position of high tensile wire has not been easy; as regards the smaller gauge wire used for pre-stressed bonded components such as beams and rafters for house building and factory construction, the position has been eased somewhat by agreement on a specification which will bring the high tensile wire required into the normal range of hard drawn wires where the supply position is easier.

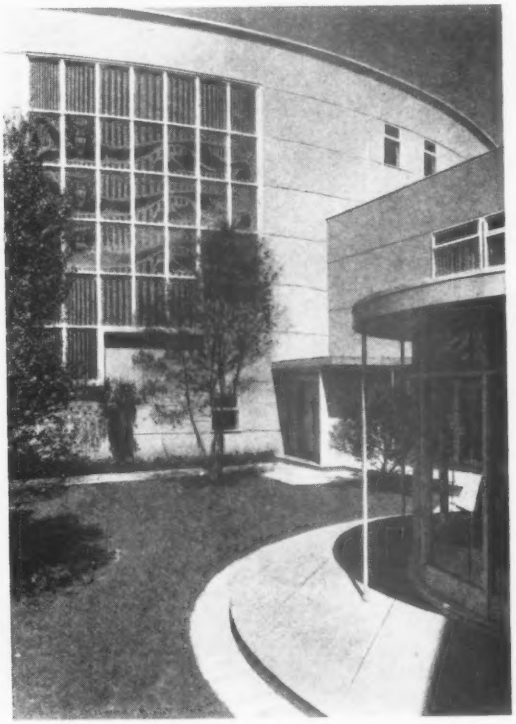
As regards the larger gauge wires, the demand for these products on other work of great national importance has produced greater supply difficulties. The position, however, with regard to all diameters of high tensile steel wires is being investigated by the Ministry of Supply in conjunction with the Iron and Steel Industry, and already sufficient quantities of wire have been made available for any anticipated full scale development work during the next twelve months'.

Above: The British Pavilion at the New York World's Fair 1939. The main entrance is illustrated on the cover. Top right: The British Pavilion at the Johannesburg Exhibition

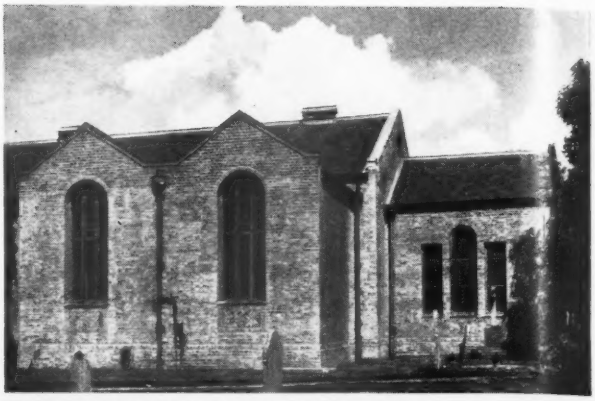
The Work of the Royal Gold Medallist for 1949

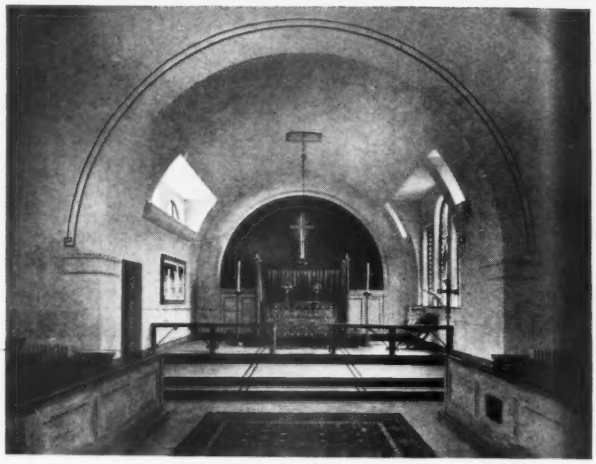
Howard Robertson, M.C., S.A.D.G. [*F*]





Above: The British Pavilion at the Johannesburg Exhibition (1936). Right: A view in the grounds of the New York World's Fair Pavilion





Left: The offices of 'The Practitioner' (1937) at No. 5 Bentinck Street, London. Above: The parish church at New Milton, Hants (1928)

The first floor hall of the showroom of Holloway Brothers Ltd., South Audley Street, London (1936)

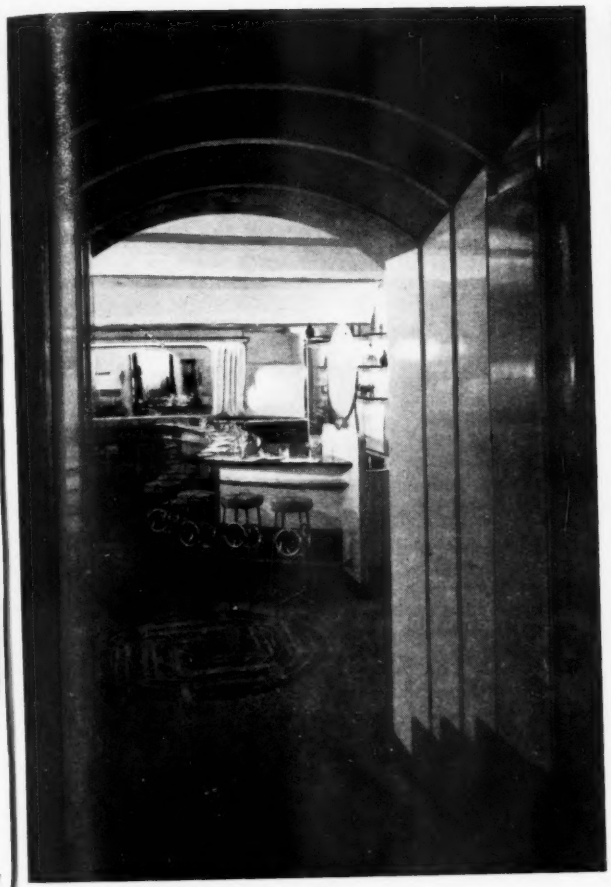
Flats in Avenue Close, Avenue Road, London. Built in two schemes (1934 and 1937)

The Portman Day Nursery, St. Marylebone, London (1938)

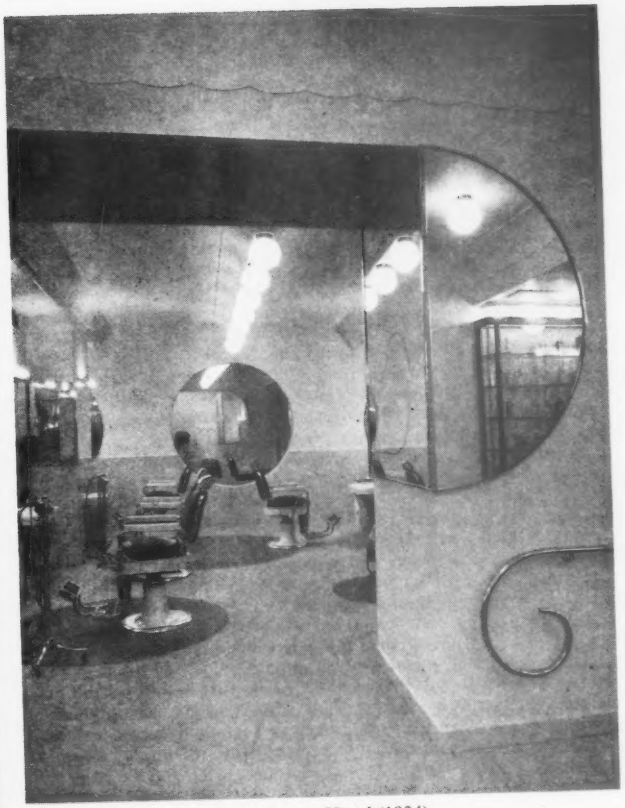
House at Lake Zug, Switzerland (1931)

Above: Gateway to the cortile of the house at Lake Zug.
Left: House at Tunbridge Wells (1933)

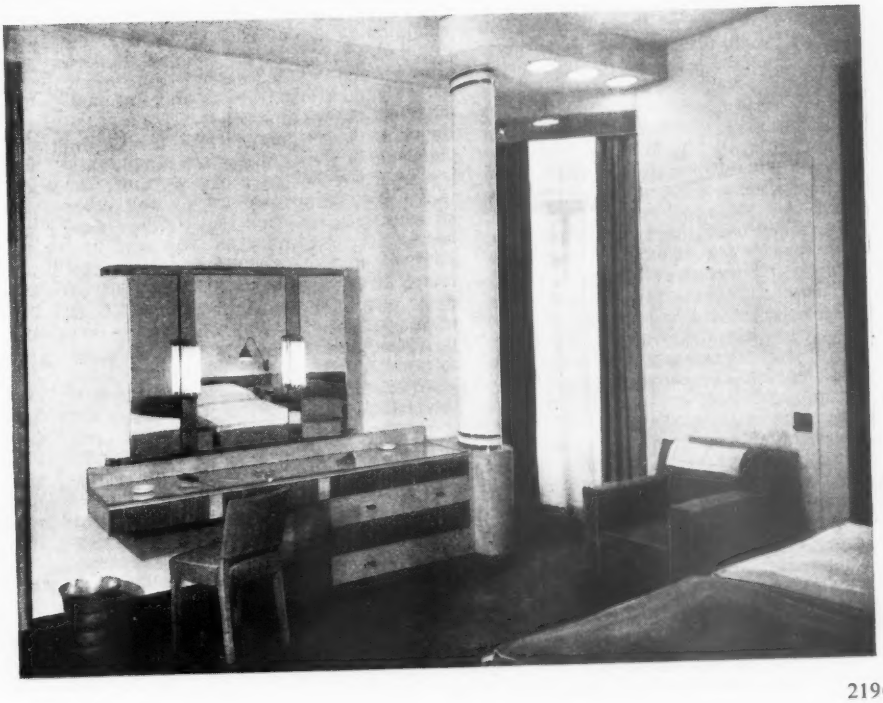
Above: House in Thurloe Place, London (1928). Left:
House at Cobham, Surrey (1935)



The Berkeley Buttery, Piccadilly, London (1932)



The hairdressing shop at the Savoy Hotel (1934)



A typical bedroom at the Berkeley Hotel, London (1936)

Force and Form

The Æsthetics of Stress Distribution

By F. J. Samuely, B.Sc., A.M.I.C.E., M.I.Struct.E., M.I.W.

Read at a meeting of the R.I.B.A. Architectural Science Board on 15 February 1949. E. Maxwell Fry [*F*] in the Chair

IT IS A GREAT HONOUR for me to speak to you tonight, and I have collected sufficient courage to do so only because the theme is one in which I am extremely interested, and because during the last ten years I have been trying to collect data on it. From this I have found that certain very interesting conclusions could be formed about the architectural expression of stresses, but as I have not prepared a typescript my remarks will be more in the nature of a talk than a formal lecture.

What interested me in the first instance was the question of when the architect is justified in showing the stresses, and then, if they, or rather the structure, is to be shown, how can this be done? How can the architect convey to an observer that there are stresses in the building without having to make them too obvious, that is, without going to the extent of marking the stresses on the structure itself, which obviously is impossible?

Before going into these questions there are a few preliminary remarks that I would like to make in order to avoid misunderstanding. I have no intention of talking about functionalism or anti-functionalism; that is entirely outside my lecture. All that interests me is this: if the architect wants to show the structure and the stresses how is he to do it, and if he wants to hide them, how is he to do it?

It is interesting to find that there is a constant oscillation of opinion about the importance of showing the structure. While I am not going to deal with that in detail, I should like to say that there appears to me to be a quantitative rather than a qualitative difference between the functionalists and the anti-functionalists. Apart from a few structures which have just a single purpose, such as bridges, it is not really possible to show the function of the stress without any compromise whatsoever. Similarly, there are very few buildings in which the structure can be pushed completely into the background.

I am interested in this problem for another reason also. During the Middle Ages certain forms appeared which were dictated, or at any rate influenced, by structural considerations. It took several hundred years for such a form to take shape after the materials, the labour and so on reached the stage when that shape became possible or useful; even after people were ready to accept a certain shape, it took quite a long time for it to crystallize. That did not matter, because changes did not take place quickly, and what was right in, say, the year 1100 A.D. was almost right in the year 1200.

Things are very different today. There are certain techniques today which make certain kinds of architecture possible. Such techniques, however, are useful only for, let us say, twenty to forty years, and if the architect does not catch up with what is happening, and does not use the technique in the early stages, he may never come to do so at all.

Let me give you an example. About twenty years ago the welding of steelwork was introduced. Personally, I am of opinion that welded steelwork is of immense importance to the shaping of buildings, and I intend to show you a few illustrations to explain my point; but, when we look round, what effect on architecture has the welding of steelwork really had? Although twenty years have passed since its introduction, it has so far had little effect. There is good reason to believe that in twenty years' time welded steelwork will no longer be used; it may be superseded entirely by aluminium. That is merely a possibility, and not a statement; but, if it should prove to be correct, half the time has gone.

In this lecture, therefore, I want to explain first of all that there are actually only three forms of structure, and I want to speak of the basic attitude which the architect might have to stresses and structure. That will not take me very long, and I shall then come to the main part of my talk, and show you how the stresses in a beam can be used to give the shape of the beam. The same thing applies to arches and other structures. I am afraid that my investigations (if I may call them so) have not, however, gone very far into the subject-matter, and it would be of great use if other people became interested and took the matter up and went more deeply into the various questions that arise. I want then to point out that lattice constructions deserve an entirely new attitude on the part of the architect, and that, with the use of the newest techniques, lattice constructions can give very good shapes, though I am afraid that the older techniques did not foster very great interest in them.

Let me first deal with the three main forms of structure and show a few examples. I am sure that you all know these examples, but it is useful to bring them together. The three types of structure are (i) beams and columns, (ii) arches and frames, and (iii) vaults and domes. Bridges are the best illustration of the first two, because they

Fig. 1: Bridge at Carabit, France

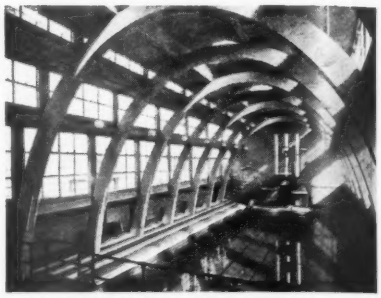


Fig. 2: Public baths at Northampton

are simple examples of pure structure. The arch is a construction which, so to speak, combines the column and beam. It is in a plane, and an arch, as you all know, is essentially a compressive member formed to a line of thrust dictated by the loads. As the loads vary, bending is introduced into the arch.

An inverted arch, but still an arch, gives the suspension bridge. There is no essential difference, except that we have a tensile member, and the cable is very thin compared with the little beam underneath. I say 'little' because it is in fact small in dimension.

A rigid frame is in principle the same as an arch. The shape is somewhat different for practical purposes, and so, because we go away from the line of thrust the bending moments and dimensions are larger. We have to deal with a thrust and essentially we have to class this as an arch.

The market hall in Frankfurt is an example of a vault construction. A great deal has been said about vault construction, and here the structure is not quite so clear. There are two possible shapes: the cylindrical vault and the dome. These forms of construction are old, but they have been reborn in reinforced concrete in the last twenty years. In the Frankfurt market hall the vaults are supported not by a beam or a wall but merely at points by columns. In this instance the shape of the columns is necessitated by the need for great strength against wind forces.

The most famous example of a dome is the market hall in Leipzig, and I believe that at the moment it is the largest.

Finally, there is the mushroom construction which can be derived from the vault, assuming the vault to get flatter and

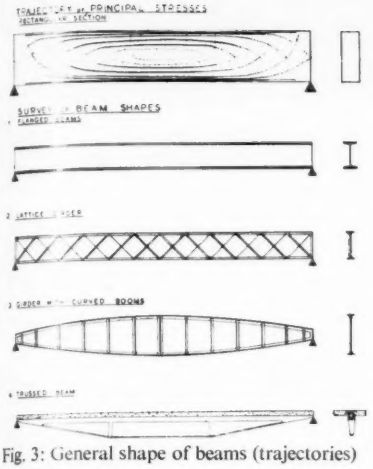


Fig. 3: General shape of beams (trajectories)

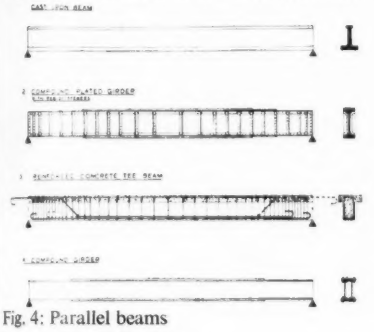


Fig. 4: Parallel beams

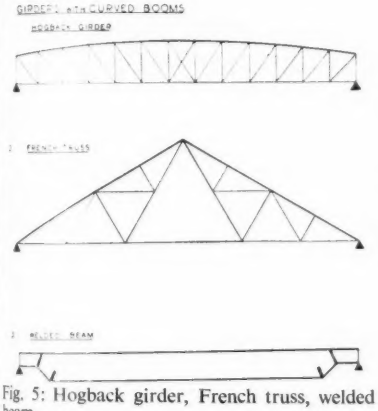


Fig. 5: Hogback girder, French truss, welded beam

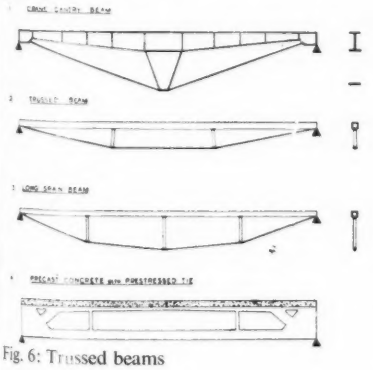


Fig. 6: Trussed beams

flatter. I prefer to regard it in that way rather than as a type of beam construction, because it is in space. I should like to emphasize that point: the beam and the column are in the line, the arch and the frame are in the plane, and the vault and mushroom construction are in space.

I come now to my next point, the basic attitude which an architect can have towards these structures. An architect may show the structure, exaggerate the structure, or detract from the structure. All three attitudes are discernible in history, but there is one interesting point which I should like to make here. If today the architect wants to detract from a structure he usually hides it, but three or four hundred years ago an architect had an entirely different means of doing so. He knew that certain lines and curves would do it without actually hiding the structure.

There is food for thought there. It may be that the point which I mentioned earlier is responsible for this, namely, that there is not enough knowledge about structure, how to show it, how to hide it and how to detract from it; and so today, if the structure does not seem to be the right sort of thing to show, it is just hidden away behind a false ceiling or walling. It may be, on the other hand, that there is another reason, namely, that we have much more involved buildings today than we had two hundred years ago, and these involved buildings do not allow the showing of structure so much.

In showing a structure there are certain traps into which it is easy to fall. In the first place the structure and the stresses will give a pleasant, æsthetic effect only if both the external and internal loads can be shown. Unfortunately, there are hundreds of cases where you can not show the load. Even with an ordinary bridge you have to imagine the load. You can see a column standing on a structure, but you can not, if you are inside a room, see the column in the next storey, which is carried on the structure. If you shape the structure to carry this column on the next floor you have something that, from the lower room, looks incomplete. I would not say that it is necessarily something that is ugly; on the contrary, it may be very pleasant in a different way. It, so to speak, infers something that is not there. In certain cases we may not want to infer things that are not visible, but in others we may. The architect, therefore, may often have to deviate from the actual stresses or actual structure to show something different.

There are, however, numbers of other cases. No one believes that carrying stresses is in every case the main function of a building; in a block of flats, for instance, it may distract your attention very much if you see the whole structure in every room. In this type of building there are other things it is more important to show than the structure. Without going into the question of when to show it and when not to do so, which is outside my province, let me put it in this way: both attitudes are correct at certain times, and we have to establish a certain rule about when to show, when to emphasize, and when to detract from the structure.

Let me give you a few examples of emphasizing the structure. You all know the Roman arch with false columns in front. This is a case of emphasizing the structure. The columns are put in front to draw attention to the structure. They are not necessary for carrying purposes, but the actual structure does not create a sufficiently clear impression. To give another instance, very often in early Gothic the structure lines are so over-exaggerated that you can think only of structure all the time, and sometimes not even of the right structure.

The Palace of the Doges in Venice is possibly the most structurally correct building that has ever been erected. I know that this fact has not always been recognized, and sometimes people have considered it almost Baroque; but that is not so. The Doges' Palace has a great wall on top—a heavy load. It is a Gothic building, and, being a Gothic building, it has Gothic arches. I do not want to go into the question of whether a Gothic arch is the right thing for given loads, or whether it has been brought about by purely abstract considerations; the point is that a Gothic structure is not suited for carrying a uniformly-distributed load, and so in this case the actual load sits on small Roman arches, and these Roman arches provide point loads, which is the correct thing for a Gothic arch. These point loads sit on small Gothic arches, which provide another series of point loads which sit partly on piers and partly in the centre of bigger Gothic arches. If somebody were asked to show the best way of bringing a heavy, uniformly-distributed load of this kind on to Gothic arches, this would be the method. While I believe that whoever was responsible for the structure never thought of this, but did it by intuition, the fact remains that his intuition was correct.

In the Fountain Court in the Alhambra the problem is somewhat similar; it is also the problem of a very large load which has somehow to be brought down to foundations, actually the large load does not really rest on the visible columns, but sits further back; anyone looking at this tower, however, must get the impression that that load is sitting on the columns. That is an instance of where it is necessary to put up a false structure to indicate the action of the real one. The arches here, which bear some resemblance to Roman arches, carry the load and bring it to rather slender columns. Incidentally, these columns, though erected in the 13th century, would not pass present-day L.C.C. regulations. I think that this is the first example of cast iron columns in history.

I come now to the possibility of hiding the structure. I have already said that in the Middle Ages they knew how to detract from the structure without hiding it. Rochester Cathedral is such an example, but the same technique is to be found in Norman churches generally. In Rochester Cathedral sit columns on round Norman arches, which is definitely incorrect, but in

that way the eye is somewhat distracted from the actual working of the stresses. Another very subtle way of doing this is to show an incision into the line of arches. Strictly speaking, if an arch is showing the line of stress, the last thing which should be allowed is any break in the line, which should be continuous. I shall show you later how that was dealt with in late Gothic, when they did not want to over-emphasize the structure. With modern buildings it has become the habit to hide completely the actual structure, although in some cases, notably the Palais des Nations, Geneva, the structure has great architectural potentialities.

Before I come to actual stresses I want to show another example of how wrong it is to have hard and fast principles about structure. Fig. 1 shows in the upper half a bridge constructed about forty years ago at Carabit in France. You all know that if there are point loads on an arch the line of thrust is not a curve but a series of straight lines. In this bridge two loads come on to a round arch, and the result is extremely ugly. On the other hand, in the swimming bath at Northampton (Fig. 2) you have exactly the same thing, a round arch and point loads, but in this case it was the inside shape which was to be shown, not the full structure, and if the architect had formed that arch to follow the line of thrust he would have emphasized the structure more than he intended, and the result, although more correct as a structure, would not have been so attractive as a space. You see, therefore, that you can have two entirely different attitudes towards exactly the same construction under two different conditions.

I now come to the main part of my lecture, to the question of what we can do about stresses and how we can show them. In every beam, in every structure, there are stresses, and these stresses are at every point in a certain direction. In actual fact stresses act in all directions, but there are what are called 'main stresses' in a certain main direction at every point. This is nothing new; these stresses have often been plotted, and are called trajectories of stress. I am going to show you these trajectories, and I think that all structural forms can be based on these trajectories.

I have plotted such trajectories for beams only, and I must confess that the reason for this is that it is much more complicated to do so for frames and other structures, and I had not sufficient time available; but this will give you an idea of what I mean. Afterwards I am going to show 'anti-stresses', by which I mean the lines that are diametrically opposite to those of the main stresses and which are of great importance.

In Fig. 3 there are several diagrams. In the top one the stress lines are plotted: they are shown closer together, or thicker, or both, where the stresses are larger, and thinner or dotted where the stresses become smaller. This shows what really happens in a beam. It is a very nice pattern, but it would be very difficult to show it in any way; you can, however, idealize it and show something of it in a beam. You can, for instance, take the parallel lines, and you get the type of construction shown in beam No. 1 in Fig. 3, which is an ordinary steel joist with two parallel flanges, one top and bottom, where the stresses are greatest. Again, you can take the motif of the trajectories crossing each other. They cross each other in all circumstances at 90 degrees, and this results in the lattice girder, diagram 2. Finally, it can be said that the stress lines are not really parallel lines, and you can try to get away from the outside shape and show those lines by the fish-bellied truss, diagram 3, Fig. 3, thicker in the middle than at the ends, more or less in relation to the parabola; or you can have a compromise, between 1 and 3, and have something which can be more like the one or the other, with one straight line and the other, which is very much emphasized, near the parabolic line, so getting the trussed beam, shown in diagram 4. These are the four main shapes.

We can sub-divide them, as shown in Fig. 4. Vertical lines can be used, in various systems—having them further apart in the middle than at the ends. There is also the reinforced concrete beam, but, while this gives a nice sort of picture, it is not one that can be seen unless one day reinforced perspex is used to reveal the reinforcement. Finally, there is the compound girder, which has more stress in the middle than at the ends.

In Fig. 5 you see the parabolic shape. I do not want to go into a great many details, but the figure shows the hogback girder and the French truss, shaped to fit the roof, and, finally, a plate girder that can easily be carried out with welding. This shape gives the girder great stability, and is of advantage for crane and similar girders.

Finally, in Fig. 6, we have a type towards which I have, I am afraid, a certain bias, the trussed beam. I believe that much greater use will be made of this type in steel and concrete than before. You get shapes like diagram 1, which is particularly important because the centre part may take some of the bending, and this is very useful for very heavy loads on large spans. Diagram 2 is a variation of 1, and there may be three, four, five or six points. Diagram 3 need not necessarily be a parabola; in many cases a different outline may be more useful, and the beam can be shaped very much according to the loads, to give the minimum stresses. Diagram 4 is more or less on the same principle.

So far I have talked about ordinary beams. Fig. 7 shows trajectories and outlines for continuous beams. I shall show examples of these later, and show that the same sort of problems occurs as with ordinary beams. In continuous beams there are a number of points where stresses are prevalent, and in particular the points over the supports. This diagram can be translated into an ordinary beam, diagram 1, or into the type of construction shown in diagrams 2 and 3, or finally into the suspension bridge, diagram 5. The suspension bridge is shown on an entirely different scale from the others.

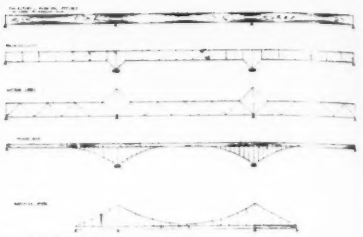


Fig. 7: Continuous beams

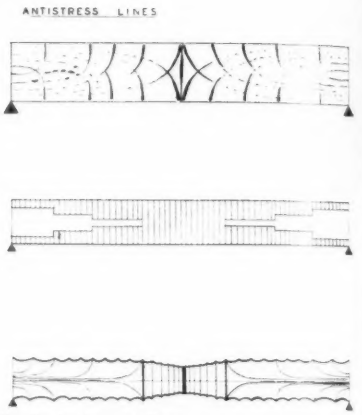


Fig. 8: Anti-stress lines

The Forth Bridge, for example, derives its shape and beauty entirely from the stress lines, which are extremely prominent—indeed, exaggeratedly so—at the supports, and very small in between. You might class this almost as an exaggerated way of showing the structure.

The last reference that I want to make to historical structures which accurately indicate the stresses is Lincoln Cathedral, which is Early English. We find almost everywhere in Early English churches attempts to do something which is in conformity with the actual stresses, and so a considerable load is put on the points of arches. At the roof, where there is no longer a load, a keystone is usually placed on the arch to indicate a load which I agree is not usually there, but which at least suggests itself to the observer.

Fig. 8 deals with anti-stress lines. In order to arrive at the first diagram I have taken a bending moment diagram and converted it into its reciprocal. Where the stresses are largest I have shown the lines small or dotted or far apart, and where the stresses are smallest I have shown the lines thick or near together. This is what should really be shown on a beam to distract attention from the stresses.

In this example I have tried, as before, to idealize the stress lines. You get more vertical stresses in the middle and less at the ends. It is something which I have never seen yet. You saw before the fish-bellied beam which had the greatest thickness in the middle. The third diagram here shows the exact opposite, a beam contracted in the centre. Further, the rather pronounced stresses that hit the circumference of the

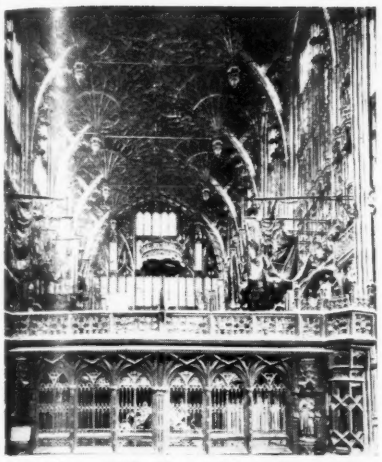


Fig. 9: Henry VII's Chapel, Westminster Abbey

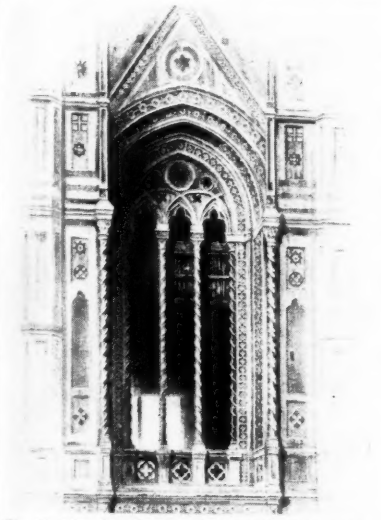


Fig. 10: Window in the Campanile, Florence

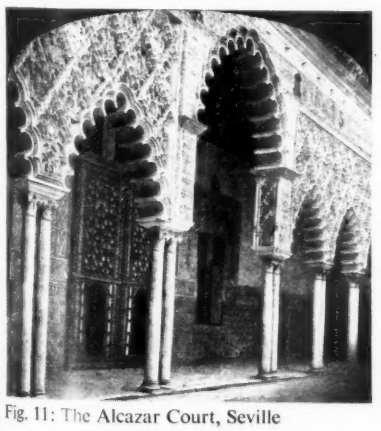


Fig. 11: The Alcazar Court, Seville

beam can be linked together to give the outline shown. You will say that you have never seen its like in practice, but I think that you are wrong.

In all Late Gothic work, such as Durham Cathedral, and in almost all Decorated and Perpendicular Gothic cathedrals, it may be seen that while the arch has a Gothic form, inside the arch something is added which is very similar to the sort of stress lines shown in Fig. 8. I do not imagine that the idea of showing anti-stresses was deliberate however. As Gothic went on we know that people more and more tended to detract from the structure.

Fig. 9 shows the Henry VII chapel in Westminster Abbey, and here you see the kind of effect that was achieved. While the main arches are of Gothic shape, you get in between the stalactites which are very similar to the anti-stress lines, the intention being to draw attention away from the structure.

There is a window in the Campanile at Florence, Fig. 10, which has a similar shape. It is a most beautiful piece of architecture, and it shows that the combination of the stress and anti-stress lines can give a very pleasing result. You will observe the helical columns, which are actually not load-carrying.

Going one step further, you get something which is Baroque. Fig. 11 is not actually Baroque, but is one of the arches in the Alcazar, Seville, which is Saracen architecture, but the principle is exactly the same. There is nothing left of the arch but the anti-stress lines, and it is obvious from studies of that architecture that that is what is intended, that you should not think too much of structure. Often the anti-stress effect is achieved by alternating colours around the arch. There are various examples of this in Siena, Amalfi Cathedral, and elsewhere.

In the next part of my lecture I would like to come to modern construction. I was perhaps exaggerating when I said that modern construction has had no influence on architecture. I think that it has probably had some influence, but that influence has not been very wide-spread; examples are few and far between.

Fig. 12 shows riveted steel construction, and Fig. 13 shows welded steel construction. I quite appreciate that no architect could do much with the former, but I think it would be perfectly feasible to use the latter and make an interesting shape of it. Unfortunately, it is rare that such use has been made of the structural outline.

Fig. 14 shows a railway station in Germany with a welded frame. That shape of frame is, of course, the best for many buildings, and would have been for many buildings erected here, but little advantage has been taken of it.

One of the modern constructions that is well suited to architectural expression is the shell construction. Cylindrical shells are, of course, very well known. Fig. 15 shows a dome at Folkestone. This is a functional shape, brought into relationship with the surroundings.

Fig. 19 shows a design for a hangar, but it has not been carried out; the architect was the late Mr. Nicholson; it is an attempt to do shell construction in steel, and is called a half-shell construction. Steel beams—they are trussed beams in this case, but need not necessarily be so—span from the ridge to the eaves. The construction carrying the roof is itself in the plane of the roof. Tension members go from the centre of the ridge out to various points at the eaves, and the main construction in the centre of the building carries the whole structure. This gives a construction that can cover a long span without any heavy lattice girders. This example, being for a hangar, is a cantilevered construction, cantilevering 110 ft., but for another purpose it might be supported at both ends and be of considerable length.

I come now to my last point. I have already said that I want to say something in favour of lattice construction. First of all, I want you to appreciate that increased use of such construction, using as it does more labour and less material, is very suited to present-day conditions. This follows a general trend which has been evident in other countries for some time, and which we are taking up here. It is becoming of greater importance because more and more labour-saving devices are being invented, which means that labour becomes cheaper; on the other hand, material does not become cheaper to the same extent. For that economic reason, the lattice girder is important.

Secondly, I believe that aluminium will have an important part to play in future construction. It is entirely uneconomical at present, but I have good reason to believe that in ten or twenty years' time it will not be so. If we use aluminium the material is extremely expensive, and so lattice construction is to be recommended.

A curious thing has happened during the last hundred years; architects have, I think, become uninterested in lattice work, so uninterested that when they design a building using latticing they are not very worried about how the verticals and diagonals run; they just leave this to the engineer. That may be right, but as the engineer is not asked to give these members any particular shape you cannot expect the result to be very beautiful.

I think that there are three reasons why architects are no longer interested in latticed construction. First of all, in perspective many lattice girders are so complicated that it is not possible to see anything clearly. Secondly, riveted girders may be made from angles and channels which, being all more or less the same, do not clearly indicate where the strength lies; the weak and strong members look the same, and there is not any differentiation. Thirdly, the triangulation in some cases is somewhat inhuman and results in lack of interest. I want to show you that with welded construction, and with precast concrete, shapes are possible which are far from uninteresting. Fig. 16 shows the construction for the market hall at Lyons. One side looks interesting, because a pattern is discernible, but on the other side it is difficult to distinguish the structural members.

The Howrah Bridge at Calcutta, which was opened only a few years ago, is one

example of how ugly and complicated a riveted construction can become. Fig. 17 shows a welded steel construction made from tubes and bars. It shows a differentiation in the size and importance of structural members which is missing from riveted construction. I am not maintaining that that is the last word in shaping a truss; I merely say that it is getting towards something more interesting.

Fig. 18 is a precast concrete construction, and is actually a prototype for a technical college designed by Easton and Robertson. The precast concrete beam, which has a concrete top member and a steel lower chord, is a trussed beam. There will be a floor slab which is monolithic, cast in-situ, on top of the precast units. This particular shape of trussed beam is, incidentally, extremely economical, and I think it gives a great number of possibilities. The verticals may be vertical or sloped, sloping being the more statically correct. There may be three, four or five points, or possibly only one in the middle, depending on the span.

Fig. 20 is a diagram of another precast construction designed for a particular purpose. It is for a heavily-loaded factory, spanning 30 ft. in one direction and 35 ft. in the other, and it carries two floors. The maximum height was not needed for one of the floors, and so it was possible to have this truss at intervals. That is a very useful shape for precast construction, being similar to the one which I mentioned earlier, except that the arch is at the top instead of at the bottom, a compression member instead of a tension member.

The opinion has been expressed that precast units can be used only for non-continuous members. This is quite wrong, and the sort of design shown in Fig. 21 speaks for itself. You can see how it is made up out of single parts. The mere fact that the centre part is not completely triangulated—useful in concrete, which can take some bending—makes it more interesting than the ordinary truss construction. That centre member was in steel for this particular design, but it could be in precast concrete and would look approximately the same. It is possible in these members to make a clear distinction between compression and tension, with a thick compression member and a thin tension member.

Fig. 22 shows a construction designed in precast concrete for a film studio, but which has not yet been carried out. It was to be precast at the site and then the whole frame lifted up from a point at the top into a vertical position. I want to show that here again it is possible to get a lighter construction, to have something which is partly but not completely latticed construction, which has a good stress distribution and a pleasant appearance.

Now I have talked far too long already, and all that I want to do now is to thank you for listening so patiently and to express the hope that I may have induced one or two of you to take an interest in these matters, and possibly to carry the investigation further than I have been able to do.

DISCUSSION

Mr. Howard Robertson [*F*]: I have never known a lecture on structure to pass so quickly as this; I wish that it had gone on for another twenty minutes. Mr. Samuely is one of those engineers—I am thankful to say that there are others in the audience here—who do not say 'No' to an architect. If you ask him, 'Can you do this?' he says 'Quite simply, BUT,' and then he proceeds to tell you why.

I am unable to raise any serious points on his lecture. The beauty of welding and the tremendous possibilities of lattice construction appeal to me. The building of shell construction in Madrid was, I thought, quite beautiful, and I was impressed by the possibilities of shell construction done in steel. Those seem to me to be avenues which are open to the architect which will have a profound effect on our architecture. Mr. Samuely did not show, and perhaps could not show, a great number of buildings where the form was tremendously influenced by modern construction, though he said that there were a few. The anti-stress possibilities always seem to arise, and I suppose that the difficulty is that today there is a war between stress and anti-stress, anti-stress having a slight advantage at present.

Not all the shapes of the precast members are attractive. I think that the continuous prefabricated truss has some way to go before it will endear itself to an audience such as this; it is reminiscent of something faintly unpleasant, but I cannot remember what.

Mr. Ove N. Arup: I also want to thank Mr. Samuely for his very interesting lecture and slides. It is difficult to find any points in it which could form the basis for a discussion.

In architecture, however, I think that we are to a greater extent making use of geometrical forms such as squares, triangles, cubes and cylinders. We use simple geometrical forms because we deliberately want to oppose to the chaotic surroundings a limited region of order and calm. This Classical spirit is occasionally disturbed by an upsurge of Romanticism, and we may get a fashion for organic forms and queer patterns like the Baroque, but I do not think that it has anything to do with stress distribution; we use these forms because we like them.

Functionalism did try to assert that showing the form was architecturally a good thing, a contribution to architecture. It always had a Puritan element in it; the argument was that it was moral and honest to show the structure, and a sham to conceal it. I think that we are moving away from that idea. There is nothing inherently desirable about showing or concealing the structure. With a block of flats it does not matter whether you show the frame or not; it is architecturally irrelevant. Functionalism to a certain extent mixed up cause and effect. There were many new materials and techniques coming in—concrete, steel, and so on—and these new forms to a certain extent exploded the ideas about proportion which had gradually established themselves.

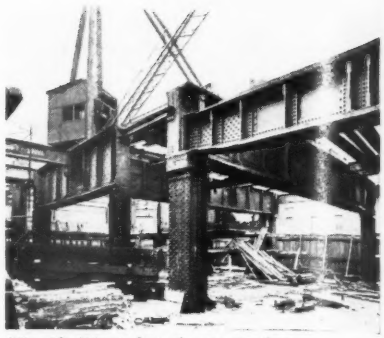


Fig. 12: Riveted steel construction

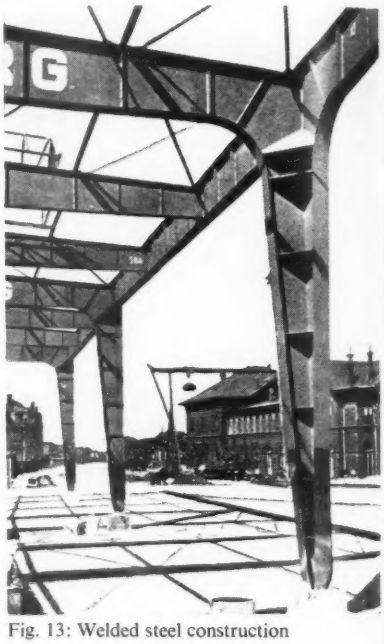


Fig. 13: Welded steel construction

Fig. 14: Railway station in Germany with a welded frame

Where we really get an approach to organic or functional form is in large structures such as bridges and halls, where we can sometimes get very near to a pure organic form which is found to be æsthetically pleasant. On a smaller scale it generally does not pay to have that kind of form, and it is also doubtful whether it is architecturally desirable. Even in shell construction the forms which we use are simple mathematical functions, circles or cylinders or domes. There are many reasons for that.

Fig. 15: A dome at Folkestone

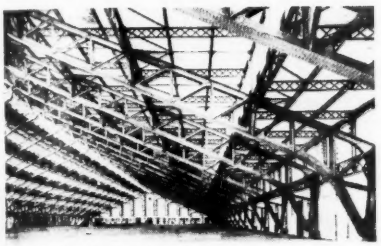


Fig. 16: Market hall at Lyons

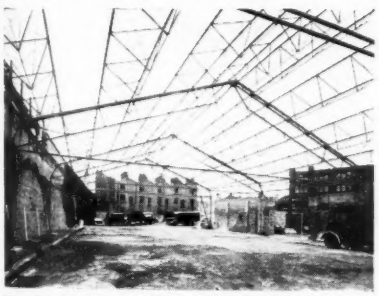


Fig. 17: Welded steel construction, using tubes and bars

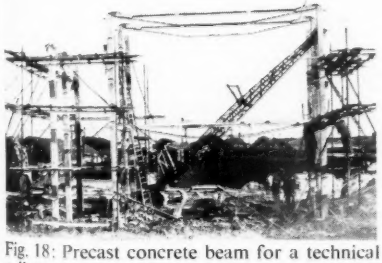


Fig. 18: Precast concrete beam for a technical college

Mr. Roger Balkwill [*A*]: Mr. Arup has remarked that with very large structures such as bridges and large halls it seems æsthetically to be a good thing to express the structure in as organic or as functional a form as possible, whereas with small buildings that does not seem to be the case. If we go from the very large to the very small and consider furniture, for example, we find that it applies again, and that the best furniture from the period style of Chippendale onwards does do that. Why does it not apply to buildings which are, say, the size of a small house?

Mr. Leonard Michaels: I cannot help feeling that the main concern of the architect should be to employ the structure which is made possible by contemporary materials in such a way that architectural development can take place on a sound basis, as it has done in previous ages. We are now using tensile materials which produce what has been called a new æsthetic, and I feel that in order to get a general appreciation of this new æsthetic the place of the structure in the building is something of very great importance, and has not really had sufficient attention up to now. Perhaps that is partly responsible for the apparent lack of development of a really sound current idiom. I do not think that it is so much a question of displaying or not displaying the structure, but rather of making sure that, since we have become accustomed to buildings which were based on non-tensile materials, we design the structure and use the materials so that architectural expression can develop from the nature of those materials, which in my opinion is the only sound basis on which it can develop.

Mr. F. J. Samuely: There are a few points to which I should like to reply. I can assure Mr. Howard Robertson that the continuous frame, which he has seen, has never been in the hands of an architect, which may explain why it looks somewhat wrong; but I think that the principle of it still remains, and that an architect could handle it so that it looked right. The continuous precast beam is a possibility, and I think it can take a pleasing form.

A very important question is why a large bridge can be formed to show stresses, and possibly furniture can be also, but a bungalow can not. I think that I know the answer to that, but I am not sure that it is correct, and it may be a little unfair on my part to put that theory forward now, when nobody can answer it. I believe that there are many functions of everything, of which structure is only one. It would be completely silly for an architect to express the function of structure in a bungalow. When you live in a bungalow you are happier if you do not see it. When, however, one function becomes over-riding you get a functionalist building, like an aeroplane or a large bridge, because you have nothing to compete with that one function. If you have a hall with a span of 200 or 300 ft. the importance of structure again becomes very obvious.

The wealthier we are, the more we allow ourselves to go away from function; the poorer we are, the more we try to keep to function. I think that this discussion has shown that. We had Baroque at a time when the church became extremely wealthy. In another hundred years we may all be extremely wealthy, and then we shall go away from all functional forms and show something entirely unfunctional.

I cannot answer the question about whether it is difficult or easy to work with architects, because it is different in different cases, but in every case it is worth while for the architect and the engineer to come together and look at the problem from both sides, as long as we have the unfortunate separation between engineer and architect which exists today.

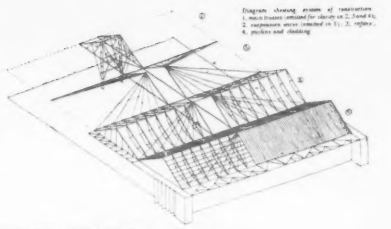


Fig. 19: Design for a hangar

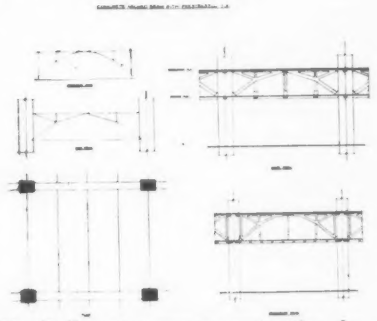


Fig. 20: Precast concrete construction for a factory

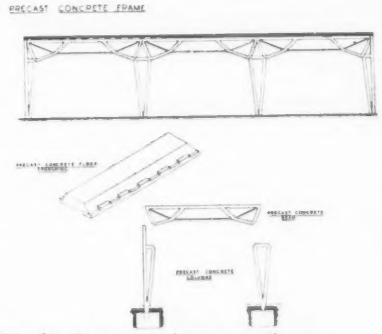


Fig. 21: Precast continuous members

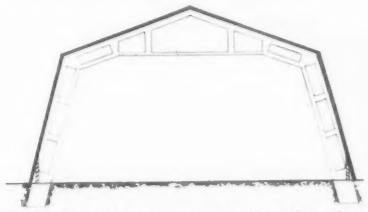


Fig. 22: Precast concrete construction for a studio

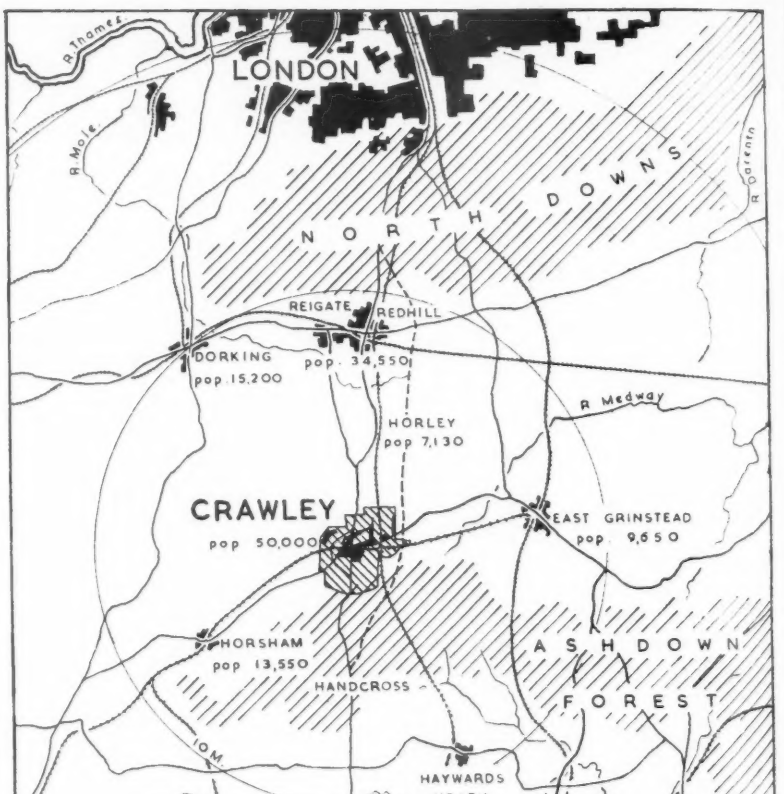
A general view of the model of the town centre. The regional map is on the right

Crawley New Town

The Master Plan

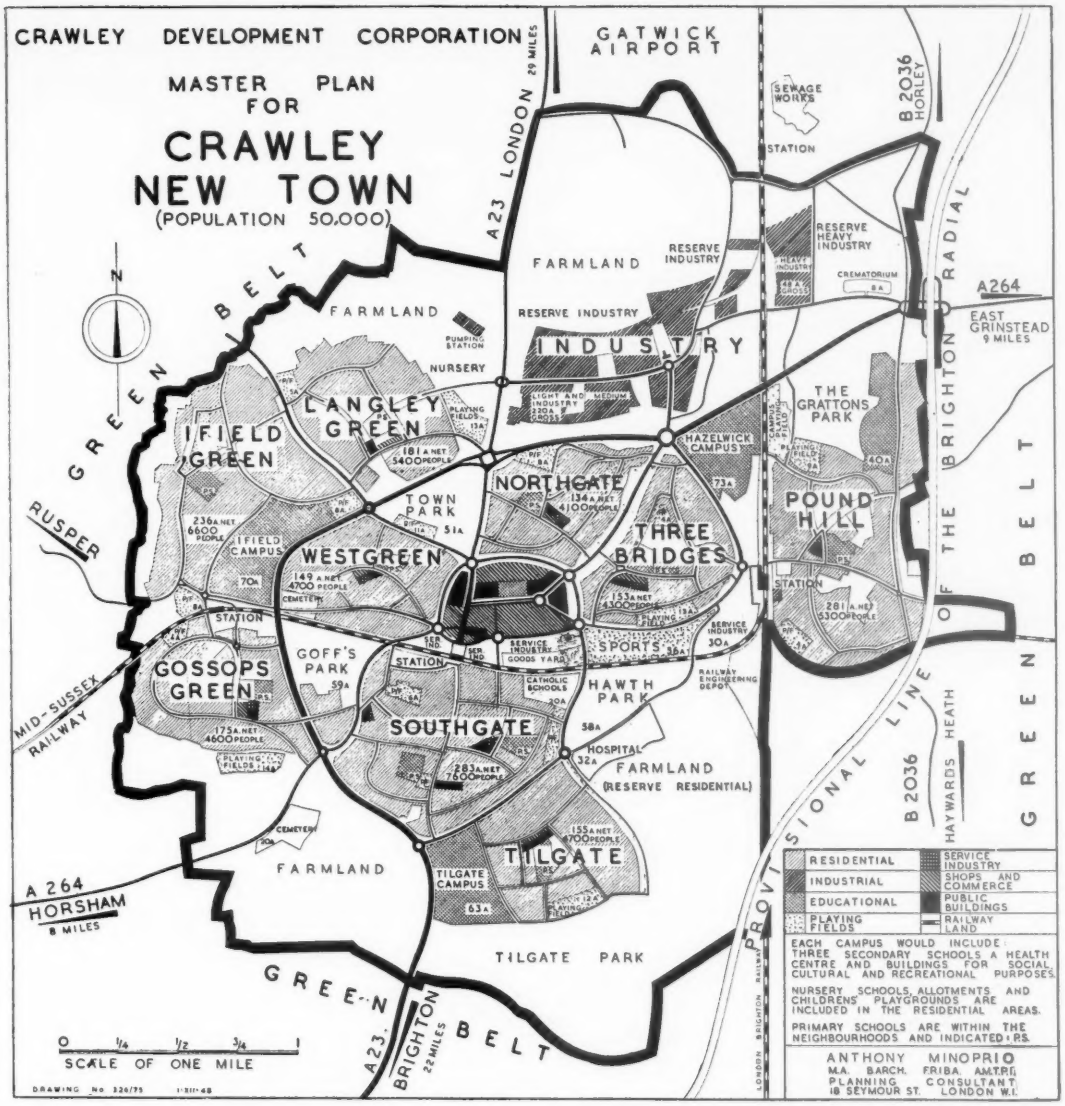
Planning Consultant:
Anthony Minoprio, M.A., B.Arch., A.M.T.P.I. [*F*]

Chief Architect to the Corporation:
Mr. A. G. Sheppard Fidler, M.A., B.Arch., A.M.T.P.I. [*A*]



THE NEW TOWN of Crawley, on which actual construction work has now started, is situated some twenty miles due south of London on the Surrey-Sussex border. The site covers approximately 4,000 acres, having been reduced by one-fifth from the area originally covered in the Preliminary Outline Plan, published in December 1947. The proposed ultimate population is to be 50,000, giving an overall town density of 12.5 persons per acre.

In general planning, as well as densities, the master plan accords fully with present-day town planning ideas. Housing is divided into nine residential areas each to be planned as a neighbourhood unit. The populations of these vary from 4,100 to 7,600, the average being 5,250, which approximates to the existing population of the old town of Crawley, incorporated in the plan. Six of the residential areas incorporate existing developments. The four neighbourhoods nearest the town centre are planned for a net residential density of 29 persons per acre, the five outer neighbourhoods being planned for 26 persons per acre. All neighbourhoods are to have dwellings of different types, and there will



be no large areas of one-size housing. As is now customary, each neighbourhood has its own centre where the primary school, local shops, church, inns, hall, clinic, garages, builders' yards and other facilities will be placed, usually grouped round a green. The shapes and sizes of the neighbourhood units have been arrived at logically by the natural boundaries formed by the main roads and railways and by the existing developments. The compact planning of the neighbourhoods ensures that the distance to the neighbourhood centres from the furthermost houses is rarely in excess of a ten minutes' walk. Most houses in the town are within 1¼ miles of the town centre. Road access to the neighbourhoods has been planned from the radial roads, the number of entries on each side to the neighbourhood being normally restricted to two. A system of footpaths and cycle tracks has been planned, wherever possible away from the busy roads, to link the homes with the neighbourhood centre, with the town centre, the industrial area and with other neighbourhoods. An unusual and pleasant feature is the retention of local place names for all the neighbourhood units.

The town centre, planned in some detail by Mr. Minoprio, covers 95 acres. It is planned as an extension eastwards of the existing development around Crawley High Street, which lies in the geographical centre of the town. The existing station, goods yard, shops and other facilities will thus be able to play an important part in the construction and social development.

The heart of the central area is a boulevard 400 yds. long by 200 ft. wide, to which the main radial roads are connected. Public buildings for civic administration, education, recreation and other purposes are sited along the north side of this boulevard and at its east and west ends. Here, in the central green strip 100 ft. wide, are preserved the fine chestnut, oak, maple and ash trees of the existing rectory garden which, combined with flowers, sculpture, fountains and other attractive features, will create a beautiful centre for the new town. To the south of the boulevard lies the main shopping and business area. Here the principal shopping streets are laid out on a cruciform plan with one street leading from the town hall towards the railway station and another running eastwards from Crawley High Street to the new retail market. The shops are provided with rear access for deliveries of goods, and with car parks connected to the shopping streets by pedestrian ways. Carriageways, 40 ft. wide, are proposed in these streets with 20 ft. footways planted with trees. The bus station is placed between the railway station and within 200 yds. of the new shopping street.

An area of 264 gross acres, mostly lying

On these two pages the town centre, planned by Mr. Anthony Minoprio, is illustrated. The existing High Street of Crawley leads from the railway station, which is to be rebuilt, and intersects at right angles with the new Boulevard. The principal public buildings are on the north side of the Boulevard, with the Arts Centre closing its axis. The shopping centre is on the south side and approached from the railway station and bus station by a short curved road. Several existing buildings are retained in the High Street. Above is a view of the model looking along the Boulevard, and at the top of the opposite page a perspective showing the High Street in the foreground

between the London Road and main railway line at the north of the town, has been selected to provide factory sites for an estimated industrial population of 8,500 workers. This land is free from existing development, is fairly flat, is near to Gatwick airport and station, and to the town sewage disposal works, and is well related to the plan of the town as a whole.

The industrial area is planned with an administrative centre, clubs and canteens, and is surrounded by a green belt. There is ample room for expansion.

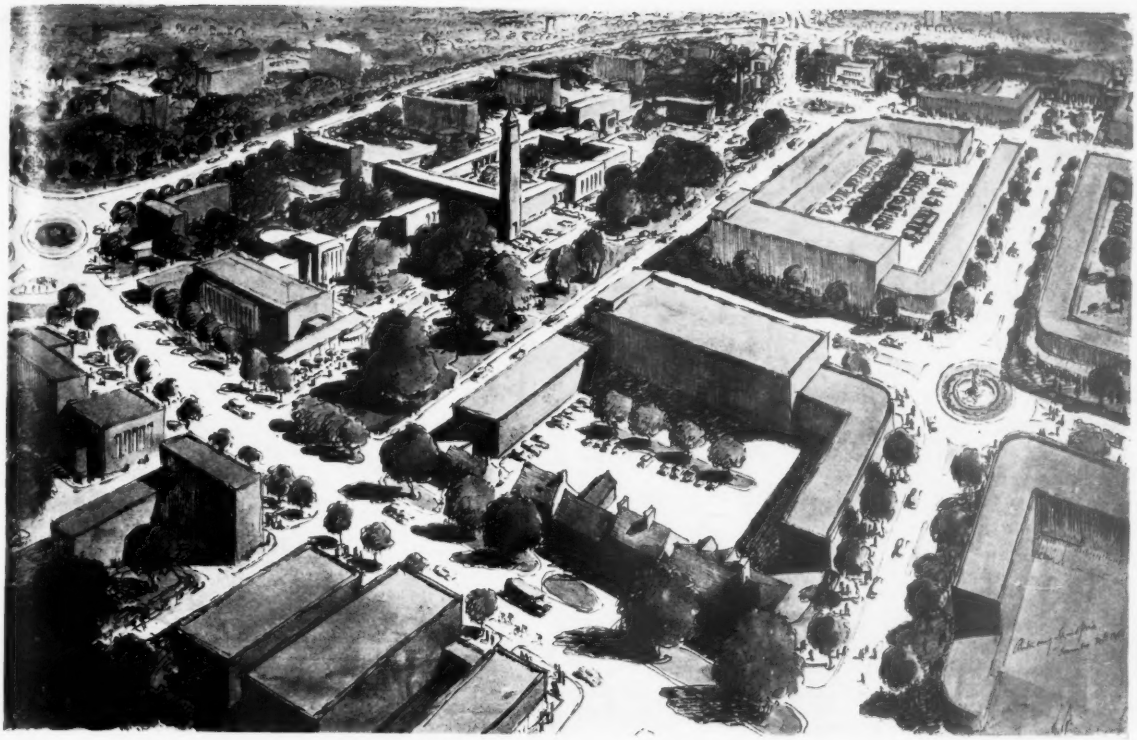
The educational buildings cover 370 acres or nearly 10 per cent of the total area of the town. They are grouped with other buildings for social purposes, thus giving reality to the present-day belief that education should be a continuing force in social life and form an integral part of it. While the nursery and combined junior-infant schools are in the residential areas close to the homes they serve, the secondary schools have been grouped on three large 'campus' sites, together with clinics, libraries and other buildings which cannot economically be provided in every neighbourhood. This new idea in the grouping of social buildings is illustrated by a drawing of a typical example on page 231.

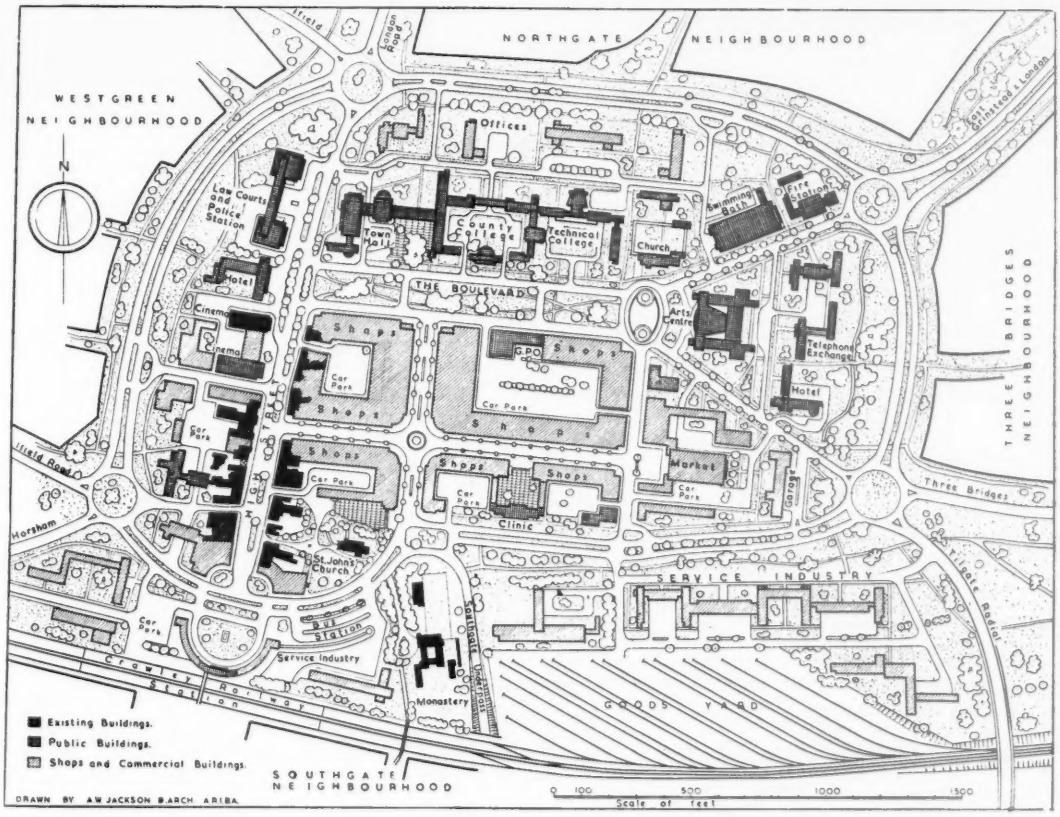
The main problem in planning the open spaces which are so necessary to the modern town is to strike a balance between the compact urban development, which is desirable on grounds of convenience and economy, and the reasonable provision of open spaces for amenity and recreation. Three areas have been selected as parks, all of them being within a few hundred yards of the town centre. Two additional parks to serve the outer neighbourhoods are provided in the attractive, well-timbered areas of the Grattons and Tilgate. The latter contains a natural site for an open-air theatre, picturesque lakes and a fine mansion capable of adaptation as a country club.

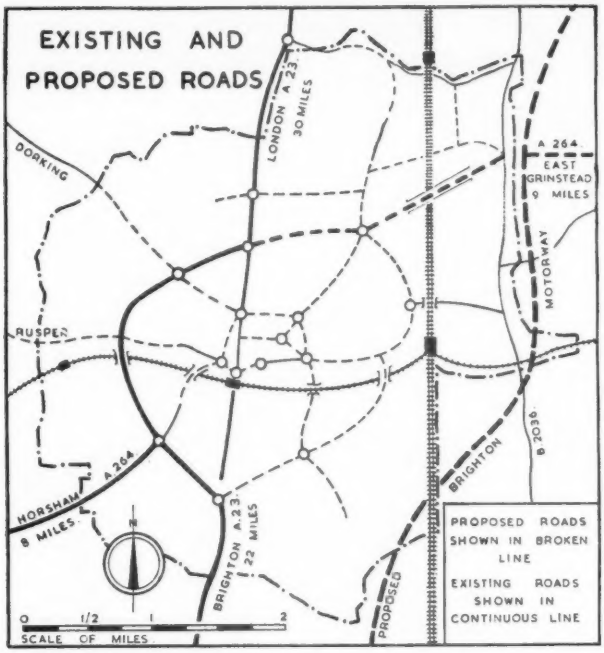
Each neighbourhood will have its own playing fields, gardens, allotments and children's playgrounds. In addition a town sports ground of 36 acres is provided between Crawley and Three Bridges, where a stadium, cricket, football and hockey grounds, tennis courts and bowling greens may be planned. In all, parks, playing fields, allotments and children's playgrounds total 629 acres or 12.5 acres per 1,000 population.

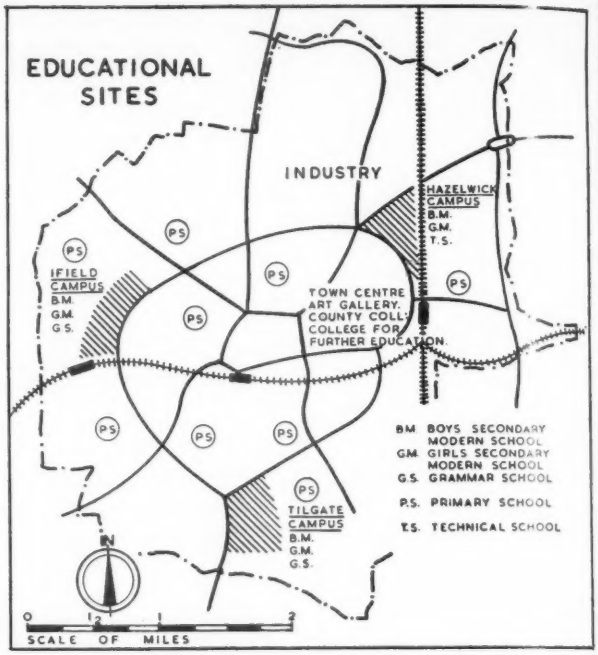
Farm land and nursery gardens amounting to 1,150 acres, or nearly one-fifth of the designated area, have been retained for agriculture. An area of 20 acres has been reserved for a cemetery on the south side of the Horsham Road, and an 8-acre site for a crematorium is proposed in Forge Wood at the north-east of the area.

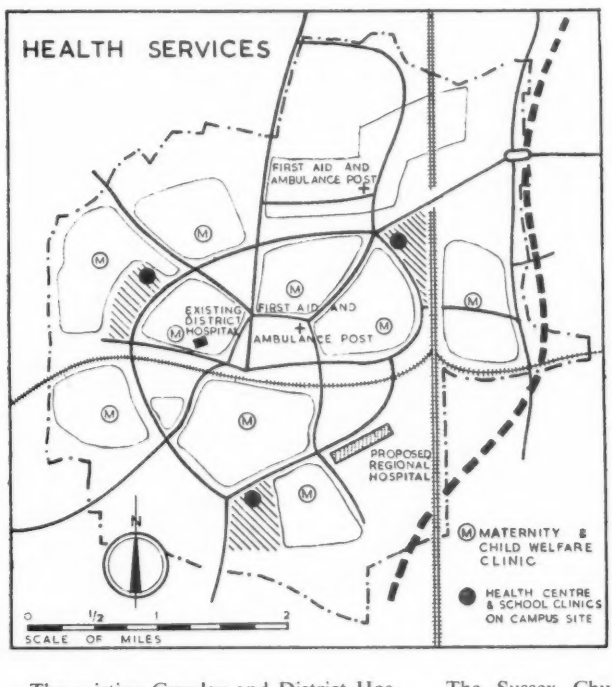
The road plan has to serve the dual purpose of carrying the London—Brighton (A23) and Horsham—East Grinstead (A264) traffic safely through the town and providing for local communications, including safe crossings of the two railway lines and the Crawley by-pass. To effect this the proposed road pattern includes an inner and an outer ring, seven main radial roads, seven bridges and three under-passes. In this plan the Crawley Ring, formed by extending the by-pass eastwards, carries both the through traffic streams, and will eventually be linked to the Brighton Radial, the proposed motorway on the east side of the town.

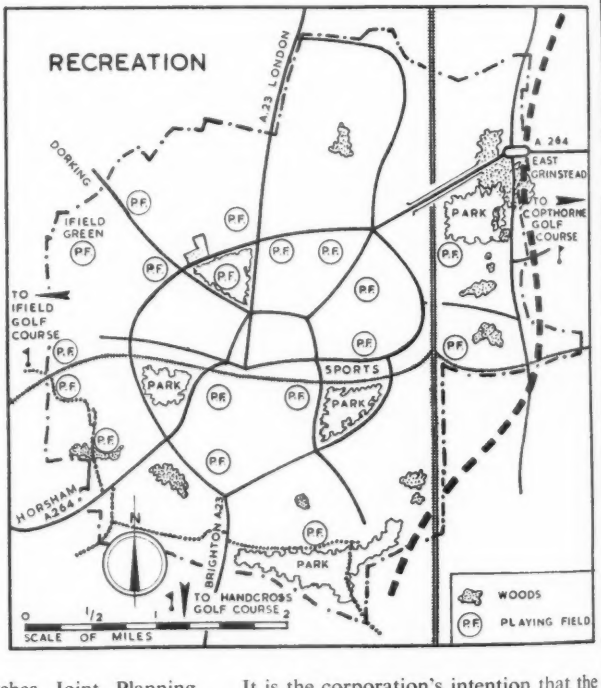



NORTHGATE NEIGHBOURHOOD
WESTGREEN NEIGHBOURHOOD
THREE BRIDGES NEIGHBOURHOOD
SOUTHGATE NEIGHBOURHOOD
N
Offices
Law Courts and Police Station
Town Hall
County College
Technical College
Church
Swimming Bath
Fire Station
THE BOULEVARD
Hotel
Cinema
Shops
Car Park
G.P.O.
Arts Centre
Telephone Exchange
Market
Garage
Clinic
St John's Church
Monastery
Service Industry
SERVICE INDUSTRY
GOODS YARD
Three Bridges
Horsham
Ifield Road
Existing Buildings.
Public Buildings.
Shops and Commercial Buildings.
DRAWN BY A.W. JACKSON, B.ARCH. A.R.I.B.A.
Scale of Feet
0 100 500 1000 1500




EDUCATIONAL SITES
INDUSTRY
HAZELWICK CAMPUS B.M. G.M. T.S.
IFIELD CAMPUS B.M. G.M. G.S.
TOWN CENTRE ART GALLERY. COUNTY COLL. COLLEGE FOR FURTHER EDUCATION.
TILGATE CAMPUS B.M. G.M. G.S.
B.M. BOYS SECONDARY MODERN SCHOOL
G.M. GIRLS SECONDARY MODERN SCHOOL
G.S. GRAMMAR SCHOOL
P.S. PRIMARY SCHOOL
T.S. TECHNICAL SCHOOL
SCALE OF MILES

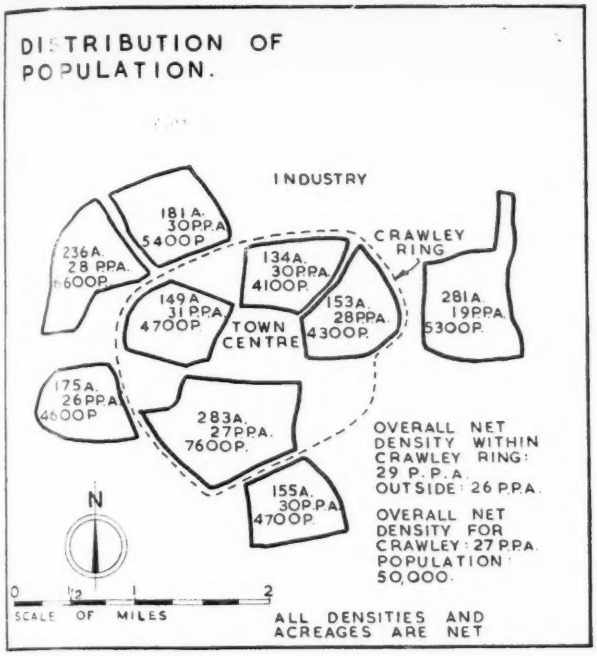

HEALTH SERVICES
FIRST AID AND AMBULANCE POST
EXISTING DISTRICT HOSPITAL
PROPOSED REGIONAL HOSPITAL
M MATERNITY & CHILD WELFARE CLINIC
HEALTH CENTRE & SCHOOL CLINICS ON CAMPUS SITE
SCALE OF MILES

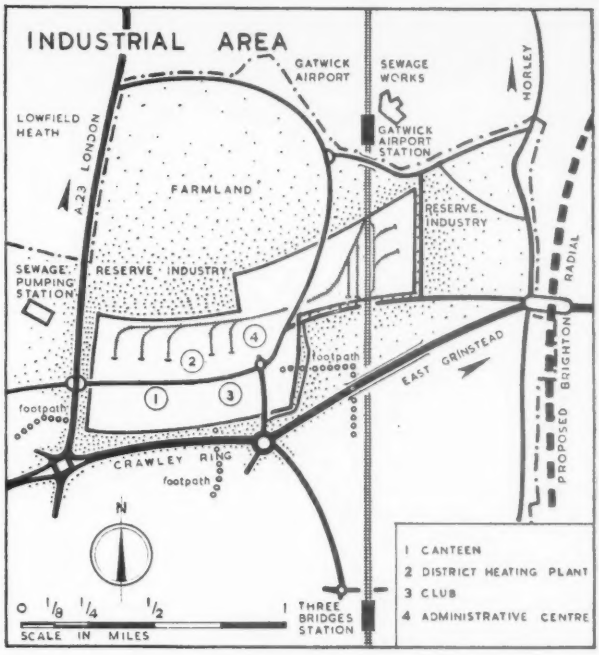


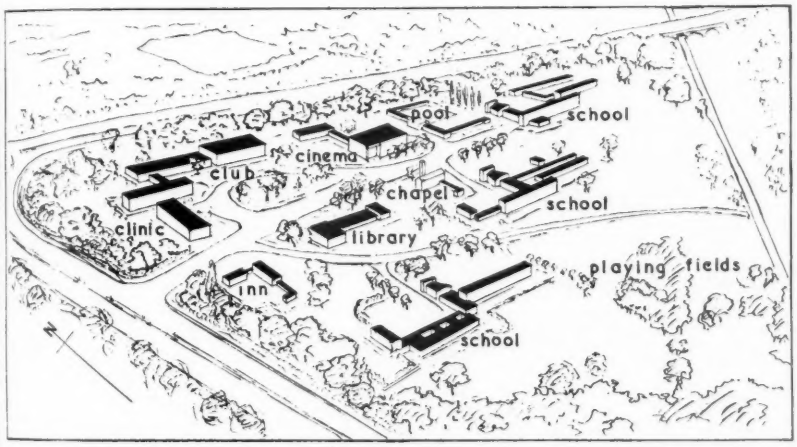
The existing Crawley and District Hospital in Westgreen will ultimately be replaced by a 500-bed Regional General Hospital situated on the fine south-eastern slopes adjoining the Hawth Park. Health centres, of which there may be three in the town, could conveniently be placed on the campus sites. Child welfare and maternity clinics will be associated with the nursery schools and day nurseries at the neighbourhood centres.

The Sussex Churches Joint Planning Committee have been consulted with regard to the buildings likely to be required by the various denominations represented on the committee. It appears that some 24 buildings may be needed to serve the town, of which eleven are existing. The Church of England will be represented in every neighbourhood either by a church or church hall, and sites for buildings for other denominations have also been proposed.

It is the corporation's intention that the town should be built in about fifteen years. Residential development is planned to take place concurrently with industrial buildings, shops, services and other buildings. The first four neighbourhoods will be developed in a clock-wise direction within the Crawley Ring. Campus sites will be developed as the need for secondary schools arises, and industrial development will begin near the Brighton Road.


DISTRIBUTION OF POPULATION.
INDUSTRY
181 A. 30 PP.A. 5400 P.
236 A. 28 PPA. 6600 P.
134 A. 30 PPA. 4100 P.
CRAWLEY RING
149 A. 31 PPA. 4700 P.
TOWN CENTRE
153 A. 28 PPA. 4300 P.
281 A. 19 PPA. 5300 P.
175 A. 26 PPA. 4600 P.
283 A. 27 PPA. 7600 P.
OVERALL NET DENSITY WITHIN CRAWLEY RING: 29 P. P. A. OUTSIDE: 26 P.P.A.
155 A. 30 P.P.A. 4700 P.
OVERALL NET DENSITY FOR CRAWLEY: 27 P.P.A. POPULATION: 50,000.
N
0 1/2 1 2
SCALE OF MILES
ALL DENSITIES AND ACREAGES ARE NET





A sketch layout of the campus at Hazelwick. There are to be three of these, and in them are to be grouped those educational and community buildings which serve groups of neighbourhood units, but which are not sufficiently important to be in the town centre

SOME STATISTICAL INFORMATION

General

Designated area: 5,920 acres or 9.2 sq. miles
Developed area of town: 4,000 acres approx. or 6.2 sq. miles
Present population approximately: 9,000
Proposed ultimate population: 50,000
Overall town density: 12.5 persons per acre

Residential

Nine residential neighbourhoods, varying from 4,100 to 7,600 population
Gross residential acreage: 2,100 acres
Net residential acreage: 1,747 acres
(Net acreage excludes primary schools, nursery schools, neighbourhood centres, woods and playing fields, but includes allotments, children's playgrounds and amenity gardens.)
Average population in the nine neighbourhood units: 5,250
Average net residential density: 27 persons per acre
Total land allocated to neighbourhood centres: 39 acres
Neighbourhood playing fields: 148 acres (approx. 3.0 acres per thousand)
Population within Ring at 29 p.p.a.: 22,191
Population outside Ring at 26 p.p.a.: 27,870

Industrial

Board of Trade's estimate of number of industrial workers: 8,500
Gross acreage reserved for industry: 264
Medium and light industry: 220 acres
Heavy industry: 44 acres
Net acreage is approximately 224 acres (224 acres at 38 workers per net acre—8,500)

Town Centre

Gross acreage approximately (within inner ring road): 95 acres
Proposed population: 1,500
Shopping frontage: 5,000 to 6,000 ft.
Capacity of car parks within inner ring: 1,200 cars.

Educational Areas

Nursery Schools 19 acres (30 required within residential neighbourhoods)
Primary Schools 79 acres (10 required within residential neighbourhoods, excluding R.C. and private schools)
Campus sites: 274 acres

Summary of Land Use

Within developed perimeter	*Acres*
Town Centre	95
Residential (net)	1,747
Neighbourhood Centres	39
Industrial	264
Service Industries (main areas)	54
Educational (excluding Technical and County Colleges)	369
Playing Fields and Town Sports	189
Parks	351
Railway Land	112
Major Roads, Bridges, Roundabouts	241
Crematorium and Cemeteries	36
Hospital	30
Nursery Gardens, roadside verges, unused land and other open spaces	473
	4,000
Outside developed perimeter	*Acres*
Farms and nursery gardens	1,150
Green wedges, roadside verges, unused land and other open spaces within designated area	770
	1,920
Designated Area	5,920 acres

Practice Notes

Edited by Charles Woodward [*A*]

IN PARLIAMENT. Festival of Britain, 1951. Asked what scale of fees or other remuneration is to be paid to architects, exhibition designers and the like for the 1951 Exhibition in London and in the provinces, the Lord President of the Council replied: There are a number of special factors which affect the fees to be paid for this work, and these will be discussed with the appropriate professional bodies.

Asked further whether an assurance could be given that every possible consideration will be given to a major share of the work going to British designers rather than to foreigners, as there are many who would be glad of such an assurance, the Lord President replied: I will certainly ask that the hon. and gallant gentleman's representation shall be given full account. (15 February 1949.)

Asked what office or Department are responsible for the planning, design of the buildings and general layout of the 1951 Festival of Britain site; by what date are the buildings, etc., to be ready; and whether it is intended to exhibit at an early date a model so that hon. Members may have some idea of the scope and particulars of the project, the Lord President of the Council replied: The Central Office of Information is now responsible, under the general guidance of the Council of the Festival of Britain, for the planning and design of the buildings and for the general layout of the Festival Exhibition to be held on the South Bank of the Thames—to which I assume the hon. Member refers. This responsibility (and the C.O.I. Exhibition staff involved) will be transferred on 1 April to the Festival of Britain office, which is then to receive a separate vote. The buildings will be completed in successive stages with a view to opening the Exhibition in May 1951. I hope to display drawings and models of the layout of the site for hon. Members in due course. Asked further whether the Royal Fine Art Commission would be kept in constant consultation from the start, the Lord President replied: I can not say, but this is a project for 1951, and we had better watch the timetable. (2 March 1949.)

Housing. Private Enterprise. (Wokingham.) Asked if he had considered a letter from the Wokingham Rural District Council urging relaxation of the controls on building by private enterprise; and if he will allow local authorities some latitude in determining the ratio between council building and private enterprise building according to local circumstances, the Minister of Health replied: I have considered the letter. It would be contrary to the Government's policy to reduce the number of houses to be built by local authorities for letting in order that more houses may be built by private persons under licence. (24 February 1949.)

Rural Housing (Sites). Asked whether he would indicate the extent to which officials of his Department overrule local authorities in the selection of suitable sites for houses in rural areas, the Minister of Town and Country Planning replied: Now that county councils are planning authorities, it rests with them to advise the Ministry of Health where there is a difficulty in approving a site selected by a district council for housing. My Department is concerned only where special planning difficulties arise. Formerly, under arrangements agreed with other Government Departments concerned in use of land, officers of my Department were responsible for ascertaining whether there was any objection to a particular site being used for housing because, for example, of its value for agriculture, mineral working or other land use. (1 March 1949.)

TOWN AND COUNTRY PLANNING ACT, 1947. The Central Land Board have issued Practice Notes (First Series) being Notes on Development Charges under the Act. The Practice Notes are obtainable at H.M. Stationery Office, price 1*s.* net.

Section 112 (3) of the Act provides that 'any reference in the Third Schedule to the cubic content of a building shall be construed as a reference to that content as ascertained by external measurement.' The Royal Institute of British Architects and the Royal Institution of Chartered Surveyors have prepared a Code for use in cubing buildings for the purposes of the Act, and the Central Land Board will adopt this Code. The Code is set out in Appendix A of the Practice Notes referred to above and reprinted on page 240 of this JOURNAL.

THE TOWN AND COUNTRY PLANNING (GENERAL DEVELOPMENT) AMENDMENT ORDER, 1949. No. 195. This Order deals with section 17 of the Act whereby the local planning authority determines on an application whether carrying out of work or making a change of use is development within the meaning of the Act. The Order lays down the procedure to be followed in making applications and in appealing to the Minister from a decision of the local planning authority.

The Order also amends the General Development Order of 1948 by permitting a change from use as a restaurant to use as a shop, under Class III of that Order. Amendments are made to Classes IV, V, XVIII and XIX of the 1948 Order, the details of which are contained in the 1949 Order.

The Second Schedule of the 1948 Order has been amended by stating that the Minister will exercise his power to extend the time for giving notice of appeal where he is satisfied that the applicant has deferred the giving of notice because negotiations in regard to the proposed development are in progress.

The amended Order is obtainable at H.M. Stationery Office, price 1*d.*, and is dated 8 February 1949.

PRESERVATION OF TREES AND WOODLANDS. A Memorandum has been issued by the Ministry giving guidance to local planning authorities on how to use their powers for the preservation of trees and woodlands. It is obtainable at H.M. Stationery Office, price 6*d.* net.

The main considerations are the effect of felling on the appearance of the countryside, the welfare of woodlands, the need for timber and for food production and the liability to pay compensation in certain cases in which permission to fell is refused.

Once a Tree Preservation Order has been made by the local planning authority and confirmed by the Minister, trees and woodlands covered by the Order may not be felled without consent, and the Memorandum indicates in what circumstances Orders should be made and when consent to fell should be given or refused. The question to be asked is: 'If these trees were completely felled and no replanting took place, can it be said there would be an appreciable loss of amenity'.

A danger of damage to the countryside is recognized in the fact that Board of Trade licences to fell are issued out of consideration of the needs of timber and not of the needs of the landscape, but this danger can be minimized if local planning authorities exercise their powers of making Tree Preservation Orders. In making and operating these Orders, however, local planning authorities are asked to bear in mind that no action will be agreed which would seriously interrupt the flow of supplies of timber.

The Regulations under which an Order is made are entitled The Town and Country Planning (Tree Preservation Order) Regulations, 1948, No. 1436, obtainable at H.M. Stationery Office, price 1*d.*

BUILDING LICENCES. NOTES FOR GUIDANCE. The Ministry of Works have issued the Third Edition of Notes for the Guidance of Applicants for Building Licences, dated November 1948, P.I.49.

Paragraph 6 has been revised so as to include the latest permitted financial limits of work that may be carried out without a building licence. It should be noted that the £1,000 limit is only applicable to 'designated buildings' which are used *wholly* for a purpose defined in paragraphs (*a*) to (*e*).

Paragraph 7 makes it clear that architects fees may be omitted from the cost of the work shown on the application for a licence, and the licence will be endorsed accordingly when granted.

Paragraph 9 defines 'property' for the purpose of a licence, and paragraph 10 states that 'where a building contains *two or more* separate dwellings each dwelling is regarded as a separate property and the remainder of the building as another property'. The wording of the Order itself is: 'Where any building comprises two or more parts which are occupied or constructed for occupation as separate dwellings, each of those parts shall be deemed to be a separate property and the remainder of the building shall also be deemed to be a separate property'. The words 'which are occupied as

separate dwellings' in the Order are important.

Paragraph 17, which deals with an application for a Supplementary Licence, does not now contain any reference to the application being sent by registered post, and the work being continued unless the applicant hears to the contrary. The revised paragraph states that in no circumstances may work outside the scope of the original licence be carried out until a supplementary licence has been granted. The deletion of a registered post application should be noted.

Paragraph 18 in the previous Notes, which dealt with supplementary licences for sub-contractors work, has been omitted in these revised Notes.

Paragraph 23 states that oral permission for work to proceed does not constitute a valid licence, nor can licences be issued with retrospective effect. As noted in the JOURNAL for July 1948 at page 418, the Minister of Works has agreed that the sum shown on the original licence may be amended by the Licensing Officer, provided that a request for this to be done is made in writing by the building owner or the person paying the cost of the work.

The Notes give the officials to whom application should be made for authorization for controlled materials.

The Notes have reference to the Control of Building Operations (No. 12) Order, 1948, dated 22 October 1948, obtainable at H.M. Stationery Office, price 1*d.*

MINISTRY OF WORKS. The Ministry have issued a Paint Economy Memorandum dated January 1949, Paint No. 2. The Schedule issued in the Memorandum of September 1946 has been withdrawn, and the following recommendations issued in its place:

1. Paints containing linseed oil should not be used in maintenance work for repainting surfaces which, by cleaning or other reasonable treatment, can be restored to a condition appropriate to the purpose for which the room or building is about to be used.
2. Paints, or other treatments containing linseed oil should not be used on exterior surfaces, previously unpainted, of stone, brick, clay-block, concrete, cement rendering or stucco.
3. Paints, or other treatments, containing linseed oil should not be used when repainting surfaces previously treated with cement paints, silicate paints, bituminous paints or wood preservatives.
4. Bituminous or tar paints should be used wherever practicable on exterior iron and steel such as gates, railings, outbuildings, etc.
5. Wood preservatives, in place of paint, should be used wherever practicable on exterior woodwork such as weatherboards, bargeboards, gutterboards, outbuildings, etc.
6. Encouragement should be given to the use of stain and varnish, in place of paint, wherever practicable on interior woodwork such as doors, cupboards, architraves, picture rails, skirtings and staircases.
7. Cement paints, or silicate paints should be used where suitable, according to the type and purpose of the building, on interior surfaces of brick, concrete, cement rendering, asbestos-cement, lime plaster and insulating board.

Copies of the new Memorandum are obtainable from 'Standards', Ministry of Works, Lambeth Bridge House, London, S.E.1.

The Brick (Charges) (Revocation) Order, 1949, No. 254, came into force on 28 February 1949.

The Order abolishes the levy on all building bricks sold, and has retrospective effect from 1 October 1948. As the levy has not been collected since 30 September 1948, the National Brick Advisory Committee advised its abolition.

MINISTRY OF HEALTH CIRCULARS. Circular L.R.L.2/49 dated 4 February 1949, addressed to the London County Council, the Common Council of the City of London and the Metropolitan Borough Councils, refers to war damaged dangerous structures and shoring erected on the public way to support adjoining properties. Demolition contractors have to pay a licence fee to the local authority for the shoring, and a deposit to cover the cost of reinstatement of the footway.

Since the contractor's responsibility terminates with the completion of the demolition and the shores may remain in position for some time after, the present arrangements are unsatisfactory to the Councils concerned.

The War Damage Commission have been approached and have agreed that in such cases the charges for the licence fee and the deposit may be made by the local authorities direct to the Commission instead of to the contractors.

The responsibility for determining whether shoring is necessitated by war damage will continue to rest with the London County Council, and in any case of doubt the Borough Council should consult the District Surveyor.

Erratum to Sir Malcolm Trustram Eve's paper. In the report of a paper by Sir Malcolm Trustram Eve, Chairman of the Central Land Board, read to the Royal Institute on 14 December 1948, published in the January JOURNAL, the first few lines of the paragraph headed 'Change of Use' on page 105 indicate that where a house is converted into flats a development charge is attracted. This is, of course, not so if the dwelling-house was in existence on 1 July 1948 (see paragraphs 18 and 68 of the Central Land Board's Practice Notes).

Correspondence

ARCHITECTURAL CLICHÉS AND SOCIAL REALISM

Sir,—Mr. Anthony Chitty's admirable criticism of the R.I.B.A. prize entries contained much of interest, especially I thought, his references to clichés. I often wonder when a cliché is not a cliché, and am more or less convinced that in architecture as in many other activities they are almost inevitable and today's inspiration is tomorrow's cliché.

If the cliché is to be deplored, where do we draw the line? Must we include or exclude the Doric column, the arcaded Norman west front, the cart-wheel windows of the Ile de France, the crocketed spires, the Palladian window, the Renaissance swag? Now we have the glass wall, the field stone wall, the bull's-eye window; though I thought the last was a little *passé* now, and belonged to the Frinton-on-Sea era of the thirties. In the past, poor communications and lack of the glossy magazine kept ideas to one locality and are now revered as signs of a local culture. Now, thanks to the camera and the printing press, distribution is world-wide and our English designers are showing great restraint by not jumping on the brise-soleil waggon.

Samuel Goldwyn has recently called for new clichés, and there is a great deal of subtlety in this request. In our profession a Michelangelo, a Frank Lloyd Wright, a Louis Sullivan, will introduce some new trick, and many will follow the prophet. In a few years the historian writes that Smith or Jones were greatly influenced by Brown and White. This is, of course, cynicism, but idealists and cynics most of us must be.

From these thoughts my mind wanders to the confusion architectural design and appreciation has developed. (Pity the thoughtful student.) The three-storey terrace house is now being promoted as a possible saviour of our planning troubles. Offered at this stage, via the Ideal Home Exhibition, with a pleasantly furnished interior perhaps it will be accepted by a house-starved public, out of sheer necessity. The three-storey terraces of yesterday that we so fondly admire were part of a vastly different set of social conditions than obtain now. Domestic help, cheap and plentiful, made the pleasant squares habitable. The wives of today and tomorrow will not thank our profession for the additional labour involved, extra cleaning and furnishings, two flights for the children to tumble down. She will dislike going down, and up, fifteen steps whenever the doorbell rings, and groceries, fuel and garbage have to be carried. She will probably be pregnant at least twice and will then dislike intensely having to scurry down to the front door from her chores on the top floor, thirty steps down, thirty up. The three-storey terrace may give us ample scope for the exercise of our skill in proportioning voids and solids, even using the Golden Rule, but the housewife will not be amused by the drudgery during her sixteen hour day. Architecture requires a social, as well as an æsthetic outlook.

The idea of a utility floor with heating and laundry equipment has many virtues,

as anyone with experience of American living will agree. The American utility basement, derived from the tradition of pioneer food storage requirements or deep freezing of the ground is now losing favour. The one-storey house is preferred. If we can not afford the space for one- or two-storey living let us then bury our utilities in a basement or soar to the skies in convenient flats or maisonettes and perhaps do a better façade than Needham House, Stoke Newington, which seems to be just another echo of the Detroit and Chicago idiom of the twenties, complete with massive cornice (another cliché).

Are we really short of space? Government and other offices straggle over many acres in low blocks. Our new towns provide for squat development in central areas with spacious malls and gardens that can only be appreciated for a few moments a day. Our unfortunately segregated school system demands acres of redundant playing fields, the gates of which are locked at five o'clock. The new factory estates are spacious.

Skyscrapers provide first class conditions for office work, and as the New York garment industry illustrates, is very suitable for certain types of industry.

Housing is almost the Cinderella in the battle for building space, yet comfortable, efficient homes provide perhaps the only way of breaking the vicious circle of bad housing, delinquency and ill-health, greater demands for hospitals and recreation centres, lower housing standards.—Yours faithfully,

JAMES CRISP, M.A.
Member, Royal Arch. Inst. of Canada.

THE PRIZES AND STUDENTSHIPS

Sir,—As usual at this time of year, the air is rent by the indignant shrieks of those competitors who, for a variety of inadequate reasons, have not been placed first in the various Prizes and Studentships.

May I, as a more or less experienced loser of R.I.B.A. studentships, trespass upon the tortured air with a mild howl at what seems to me to be a grave sin of omission on the part of the JOURNAL? The criticism published in the February issue refers, in many of the prizes, only to the winning entries; the losers are left to stare with wild eyes at their portion—a nasty little paragraph in italics beginning: 'Mr. Chitty then commented on four (or five, or six) other entries' . . .

As Mr. Chitty so rightly observed, it was an impossible task to comment on each of the several hundreds of entries submitted; but the short criticism delivered verbally at the Institute has become even shorter in print. I am fortunate in that I live in London and was able to hear the criticism; but many competitors must have been unable to be present. These unfortunates, presumably, are to be left with a pious hope that 'they will enter again this year and be successful', but without any assessment of their efforts or any guidance for the future.

Perhaps this is of little importance in the case of the design prizes—the winning plan is published and described, mistakes committed by the losers are detailed, and many competitors may even see why their own entries failed. With the research prizes (typically, the Owen Jones) there can, of course, be no ideal solution: careful assessment and comment is therefore necessary if pointers to any future lines of research are to be indicated. The experience gained in tackling the prize is largely wasted if the critic fails (in the sense of 'lets down') the competitor in this way. Please do not think that I support Mr. Jordan's magnificently careless suggestion (not printed, I see) that each competitor should be presented with a typewritten sheet of criticism; all I wish for is some small measure of encouragement and guidance for those who (for all they know to the contrary) may have been aiming in the right direction.—

Yours faithfully, C. F. WALKER [*A*]

The 'nasty little paragraph' has been purposely used in Criticisms of the Prizes and Studentships since the war for two interrelated reasons. The first is the need to economise space and the second, and more important, is that an individual criticism of a design (which is not illustrated) is of interest to only one of the JOURNAL'S 16,750 *readers. A series of statements on the lines of 'Biro's elevation is out of scale and his cloakroom accommodation inadequate' merely makes wearisome reading for the many readers, qualified and unqualified, who take an interest in the Royal Institute's Prizes and Studentships. We prefer using the space so saved for larger reproduction of the prize-winning designs so that design and criticism can be studied together and the reader form his own judgment of both. We may be wrong, but our aim is to make the* JOURNAL *readable and of interest to as many members as possible, rather than let it be a merely prosaic record of Institute proceedings. The question of conveying to an individual competitor the views of the Jury on his scheme is a matter for the Board of Architectural Education.—Editor.*

STRUCTURE-BORNE SOUND IN CONCERT HALLS

Sir,—None of the speakers at the meeting of the Acoustics Group was able to advance a theory which might fully explain the preference of the majority of musicians and critics for halls which are constructed mainly of wood. May this not be because one or more factors which contribute to our enjoyment of music have been entirely overlooked? One speaker touched upon a 'psychological element', but none was reported to have raised the less variable and more easily explored physiological element. Surely it is time that investigators took heed of the advice of Sir James Jeans, who in *Science and Music* wrote: . . . 'The tendency of sound to find paths other than those through the air . . . is not necessarily disadvantageous . . . (and) should be explored'.

It is, I believe, generally conceded that the vibrations which constitute all sound are sensed by us not only through the ear drums, but also through our skeletal frames and possibly through the flesh. Deaf mutes claim to have understood and appreciated music felt through their finger tips and through their teeth, and most of us have heard much all too clearly, though our ears were stopped by plastic plugs, cotton wool or desperate fingers. Is it not probable that a proportion, perhaps not high but possibly significant, of our enjoyment of music is conveyed to us by these extra-aural senses? If this be so, then the path taken in a concert hall by sounds so sensed would be through the floor structure.

A calculation will show that the fraction of the total sound energy of the upper frequencies directly absorbed by a timber orchestral stage is approximately one-eighth, and we may be sure that reflected sounds later absorbed would considerably augment this figure. If the hall floor were structurally linked with the stage and both were built in a material which was a good conductor, then the majority of the sound so absorbed would be transmitted through them and sensed by the audience. This would matter little if it were sensed at the same time as the direct airborne sound, but since the velocity of sound in wood is some fourteen times greater than that in air, the extra-aural senses would register it before the sound was heard. In addition, of course, the ear would hear sounds transmitted through the floor and in some cases through the walls before it heard the direct airborne sound. It is interesting to note in this connection that if the interval between hearing the structure-borne sound and the airborne sound is to be kept below one-fifteenth of a second the maximum distance of a listener from a source should be about 80 ft.

Calculations by those more qualified than me can prove whether the intensity of structurally borne sound is sufficient to warrant consideration, but the warnings of specialists when writing on sound insulation suggest that it may be a matter of some moment. Further investigation could assess the importance of extra-aural hearing. It would appear, however, that if one or both of my premises is well founded then the way is open to solving a number of acoustic mysteries. The reason why the optimum reverberation period varies with the size of the hall might be explained; the unchallenged superiority of the Gewandhaus might be scientifically analysed: the ideal that 'the hall should sound' might be consciously attained; it may be found that it is structure-borne sound which produces 'definition'—and even 'singing tone' might be defined: the snobbery of the promenaders might be justified.

The concert hall is as much an instrument as a piano or a piccolo. The piano manufacturer constructs his sounding boards of Norway spruce because it conducts sound an infinitesimal amount faster and better than other timbers. Stradivarius made the front face of his fiddles of spruce for what he did not know to be the same reason. It would seem possible that if the use of a special type of wood makes such a difference to these comparatively small instruments the superiority of

timber for the stage and floor of a hall might well be justified.

I ask only that if it should be found that wooden seats would further improve our listening, the results should not be published.—Yours faithfully,

G. WHITBY, [*A*]

A copy of Mr. Whitby's letter was sent to the Building Research Station, the reply being

Sir,—Mr. Whitby's letter raises a point which can not be answered exactly in the present state of knowledge. If any energy is communicated from a vibrating floor to a body it seems certain, on present direct evidence, that it could only be at low frequencies, probably below 100 c.p.s., and it could not be expected that this would contribute significantly to the enjoyment of music, where the range of audible sounds extends to 10,000-15,000 c.p.s. At the same time it is notably the case that in the Leipzig Gewandhaus, where the floor is of timber and suspended, the tone is good, and in another hall known to us where the floor is concrete directly on the ground and, therefore, heavily damped, the tone is poor. At first sight this might seem at least to be indirect evidence supporting Mr. Whitby's suggestion. But it may equally be the case that the vibration of a floor emits useful sounds which are heard aurally rather than by contact. Mr. Whitby may well be right that a timber floor such as he describes is valuable acoustically, but we are inclined to think it would be only for sounds heard aurally.

The point will be kept in mind for investigation.—Yours faithfully,

W. ALLEN [*A*]
for Director of Building Research

THE GOLDEN SECTION

Sir,—After having digested Mr. A. Leonard Roberts's 'homilies for the young', I find it difficult to pursue this debate without prejudice. Mr. Roberts will appreciate that if I waste few words in answering his speculations on my qualifications, it is because I wish, if possible, to keep to the point.

Mr. Roberts concedes that I have 'noticed' a weakness in the Manning Robertson thesis, but seems to regard this weakness—namely, the omission of logical justification—as a trifle. He also informs me that 'logic is generally regarded . . . as less reliable than the laws of mathematics', and reveals in another letter that his authority for this statement is a dictionary of 1895.

It is a pity that Mr. Roberts does not seem to be aware of developments in Logic since noted by a lexicographer in 1895; and his argument that the Robertson thesis rests not on an empirical basis but on a mathematical process is dependent on a use of these terms which, in philosophical or mathematical circles would be regarded as, at best, unusual, at worst, uninformed. My authorities for these comments are Hume, Locke, Kant, William James, G. E. Moore, Bertrand Russell and A. N. Whitehead.

I have read with care Mr. Roberts's series of articles in 'Architectural Design'. The illustrations are impressive but the text is not. The former give fascinating graphical demonstrations of the elementary sorts of series and their relationships, while the latter, when it is not a useful commentary, is more assertive than reasoned. The feeling it leaves with me is that the authors and/or editors of these articles have discovered the delights of mathematics and, seeking to apply them to their own trade, have not troubled to learn more than the elements of their subject. They have sailed into print and into production with the wind of emotional conviction behind them.

The *rationale* of the 'natural scale' of geometrical ratios proposed (and, I understand, purveyed in the form of set squares) by 'R' is not convincing. What is meant by 'natural' in this context is not defined. Demonstrations of the virtue of particular ratios such as the Golden Ratio have fallen very far short of being proofs, either *a priori* or empirical. Referring to Robertson's 'analysis' of the Parthenon, for instance, it can be shown with some 'very ordinary algebra' and using only the main lines of the elevation shown in the diagram, that there are 19,344 possible ratios which could be arrived at by his methods. Of this number about a dozen are Golden Ratios.

Nevertheless, the possibility of 'composing' architecture by methods analogous to those used in music and with the help of a convenient logarithmic series of ratios, can not be ruled out. If such a series or scale were adopted it might be the means of creating a new architectural skill, a new 'retrogressive eclecticism', or nothing in particular. In the meantime there are two obvious alternatives. One is that both the idea of adopting a scale and the nature of the scale to be adopted should be the subject of disinterested examination. The other is that both should prove their own virtue by results *before* being given a greater degree of publicity in the technical press.—Yours faithfully, JOHN C. HOLMES [*A*]

Sir,—Many readers of the JOURNAL will, I feel sure, have followed the recent correspondence on this subject with amazement at the substance and indignation at the tone of the letters from the Hon. Secretary.

I had hoped that Mr. Holmes's letter in the January JOURNAL would have finally disposed of the matter and that the subject would have been allowed to die a natural death. This hope having proved vain, I can no longer forbear to recount an episode which, I think, is more illuminating than pages of argument.

Many years ago, in a town which shall be nameless, a certain chief assistant sought the approval of his principal to an elevation, with the following result:

Architect (assuming a pompous air): 'Has this been tuned up?' Chief assistant (neither knowing nor caring): 'Oh, yes, I think so.' Architect (fiercely): 'Well, I want to see the construction.'

The chief assistant departed and returned later with *the same drawing* profusely decorated with entirely meaningless diagonals hastily added by a blasphemous assistant. The architect then expressed his entire approval of the elevation.

Both the architect and the chief assistant are now extremely well known (for very different reasons) and were I to divulge their names, readers of the JOURNAL would be immensely diverted, but to do so would be too unkind.—Yours faithfully,

WALTER F. BALL [*A*]

The statement by Mr. A. L. Roberts in his letter appearing on page 180 *February* JOURNAL *on this subject that 'he proposed in the next available* JOURNAL *to explain why Mr. Manning Robertson could not give certain information, was written under the impression that his letter on 'Functional Proportion' (on page* 179*) would not be published in the same issue of the* JOURNAL *as the article on 'Functional Proportion'. As, in fact, Mr. A. L. Robert's letter* was *published in the same issue, an explanation by Mr. Roberts on the 'Golden Section' was therefore made at the same time.*

FUNCTIONAL PROPORTION

Sir,—In the February JOURNAL, Mr. Lewis Curtis adumbrates an interesting theory. When a space, or, as the author simplifies the question, a line, is divided into two parts of varying proportion (so that the extremities and the dividing point may be lettered A, B and C), a fourth point X is determined, whereat the eye expects to find an object of interest. This point X may or may not coincide with an extremity, or with the dividing point. It may lie intermediately, or altogether outside the system. The position of X is determined by the proportion AB : BC.

The theory rests on the assumption that the eye travels in a predictable fashion up or down the line from a predetermined point of entry. Mr. Curtis's eye enters somewhere in the larger division. (This, he tells us, is 'axiomatic'; but is it? Another eye might be inclined to come in by the 'door', that is, by the most strongly marked and interesting feature, and to deploy thence among the larger but less arresting spaces). From the point of entry it seeks the smaller division; and, if it has far enough to travel and if there is little enough at the end to stop it, it develops such impetus as to come to rest altogether outside the composition.

His instance is that of the Doric Order. Hurtling up the shaft, in pursuit of the small and distant capital, our attention overshoots the mark and comes to rest, pleasantly enough, among the metopes and the triglyphs.

But if Mr. Curtis had chosen another Order for his example, one with a base; what then? While one eye is behaving in the fashion described, the other must surely be rushing downward with equal force, to be found at last vainly burrowing for objects of interest among the foundations.

The point, in fact, is over simplified. The arrow that points the way is easy enough to follow if it has a recognizable shaft and only one head. But in a work of architecture there are not two elements only, but many; not one dimension, but three. Even in the two simple examples that Mr. Curtis illustrates, there seem as many possible

routes for the travelling eye as there are lines and subdivisions to mark the way. (If the capital has so powerful an influence in the first case, why has it none in the second?)

The theory is attractive, and possibly true. That the basic subdivisions of a composition determine the theoretically perfect siting of the most interesting accent in some separate position, dependent on but not necessarily coincident with them, is a notion worth pursuing; but not, I believe, in the fashion in which Mr. Curtis has pursued it. For, while disclaiming a logical basis for his speculations, he links them with logic and geometry, and—if I may be forgiven—with abracadabra.

The proportions of a Doric Column plant the attention on the frieze. The proportions produced by the incantation 'AC — $\frac{1}{2}$ AB$\sqrt{5}$' would place it squarely on the top of the abacus; while, more oddly still, that of the 'Golden Cut' brings it to the point of division between one unequal portion of the line and the other. If these propositions are objectively true, they must be linked by a rule. How is this to be applied when the line is divided in half? Mr. Curtis does not say; but by extension of his theory, the point of interest, the X, must lie to one side of the centre. In a symmetrical composition, we must place our feature off-centre, like a careless housemaid replacing the clock awry on the mantelpiece. And how, speaking geometrically, may the symmetrical engender the unsymmetrical?

Mr. Curtis disarms criticism by disclaiming any thought of mathematical proof for his theory. I suggest that he weakens his case by his pious intonation of Orthodox Credo; though he has thereby avoided the pontifical thunder that has broken over the head of Mr. Holmes.—Yours faithfully,

MICHAEL DUGDALE [*A*]

WILLIAM GODFREY NEWTON DECEASED

Sir,—May I ask you to insert a small correction in my appreciation of W. G. Newton. In the sentence 'Not that he was an academic architect, in whom the power of critical appreciation, the historical sense and the urge to write are developed at the expense of the critical faculty', for the last three words should be substituted 'the creative faculty'.

As an addition to the account of the Anti-Aircraft Headquarters, it should be noted that, whoever may have been responsible for the lettering and the regimental badge painted across the brick facade, it was not the architect.—Yours faithfully,

HENRY M. FLETCHER [*F*]

INFORMAL CONFERENCES ON ARCHITECTURAL EDUCATION

Sir,—The informal conferences held at Leicester recently and referred to in this JOURNAL have more than local significance. For some time teaching staff have felt the need for closer liaison, and especially for wider opportunities of exchanging ideas and of assessing work done in other centres, but this objective seemed difficult to achieve without unwieldy organization.

It might be possible, for example, either to form a teachers' association, or to institute an annual 'course' or conference. Yet another 'association' with its concomitant officials, funds and fees, its headquarters in London, or one of the provincial cities does not really meet the case. The formal 'course' or conference with selected speakers, visits, and exhibits—though admirable in many ways—is too impersonal. Large numbers inevitably stifle discussion, intimidate the inexperienced debater and discourage personal contact. Then again the wider the net is cast the greater the difficulty in securing support from distant areas.

The Leicester experiment, however, seems to offer a good alternative solution, and it has shown that the *regional* conference, drawing upon four or five schools with a maximum representation of between twenty and thirty delegates, provides an excellent forum for discussion. Work from each participating school can be readily displayed, and the informal atmosphere encourages a free interchange of views and facilitates personal contacts. Moreover each school in turn may act as host, thus distributing the work of organization and providing variety and interest by a change of environment.

There seems to be no reason why this idea should not be extended and similar conferences arranged in other areas. Liaison could then be established between each region, and enthusiasm sustained by interchanges, and re-grouping from time to time. Out of such a scheme, of course, may come a teachers' association, or an annual general conference, but the regional meeting offers a good starting point.

Many possibilities suggest themselves now that the first step has been taken, and the Leicester School is to be congratulated on initiating the experiment. All the evidence points to a successful continuation of the project in the Midlands and the North of England, and it remains to be seen what developments are feasible elsewhere.—Yours faithfully

T. HOWARTH [*A*]
Lecturer in Architecture

With the ever-increasing activities of the Institute and the desirability of reporting them as fully as possible, it is more than ever necessary that letters to the Editor should be kept short.

Book Reviews

In the Nature of Materials, by *Henry-Russell Hitchcock*. Reprint. 8½ in. by 8½ in. New York: Duell, Sloan and Pearce. 1942 (1948). £1 15*s*.

At the beginning of his ninetieth decade Frank Lloyd Wright has more commissions, more authority, and is more widely recognized as a significant figure in architecture than ever before. Even his former inveterate enemy, the American Institute of Architects has awarded him its Gold Medal. There are few who today would deny him a secure place in 20th-century architecture, yet it is surprising how common it is to find among architects ignorance of his ideas, his buildings and his achievements. For example even such understanding authors as F. R. S. Yorke and Colin Penn in their book *A Key to Modern Architecture* suggest that since 1911 he has made little if any contributions to architecture that is in any way significant, his work being in their view too fantastic. There is also the idea that, except for the Larkin Building and Unity Temple, Wright has worked only on luxurious buildings for the rich. One often hears that Wright is a 'mere romantic', erecting home-spun retreats for escapists, that he is a back-to-nature enthusiast who would throw out the machine and turn everybody into a farmer. It may seem unimportant to controvert such crude and ignorant attitudes, but they are so widespread, and have discouraged so many students from investigating what is valid in Wright's work that it is useful to draw attention to some of these misconceptions.

First of all the view that he is an anti-machinist, an architectural Luddite struggling against an inevitable industrialization could not be more wide of the mark. In 1900 he delivered a lecture entitled *A philosophy of fine art* to the Architectural League at the Art Institute in Chicago, in which he said, criticizing the inadequacy of the schools of architecture, 'His [the architect's] scientific possibilities and demands have outrun his hand-made art as planned for him in the school curriculum. He is without lettered precedent as he stands today on the threshold of great development in the industrial direction of the world'. In the following year he delivered his famous lecture on *The Art and Craft of the Machine* at Hull House, Chicago, in which he appealed to architects to lay hold of the machine and use it. Industry and the machine could liberate the architect if they were understood and used aright, and on another occasion he said, 'We must now have sciences where formerly intuition directed us'.

From then until today, as in the work *Organic Architecture*, *The Architecture of Democracy*, he urges the use of prefabrication, he has never ceased to point out that organic architecture is securely based on contemporary scientific and industrial developments.

The idea that his contributions to architecture stopped with the original 'prairie houses' of the first decade of the 20th century is no less false. While many of the principles then enunciated for the first time remain valid, they have been developed, worked upon and transformed, each fresh phase contributing something new. The early houses were built with conventional technique, but with a peculiar sensitiveness to materials and with detail in which the superfluous was eliminated. Then came the 'textile block' series, one of the earliest applications of pre-cast concrete units as

the basis not only of construction, but of design. There is much to learn here of the linking of material and technique with design. The 'Usonian House' with its rational use of materials, the sandwich walls, making use of the strength of laminated timber, with brick or stone forming internal and external surfaces, and with plans of great simplicity but with meticulous attention to formal and spatial effects. The development of the 'work space' where before there was a kitchen, of particular relevance in these now servantless days, the use of new techniques for heating and lighting, in all this Wright was still pioneering in the 30's. He did not, however, stop there, later works, the Kansas Community Church, and Florida Southern College, made use of the cement gun and pre-cast concrete blocks. The structure of the Kansas church is a light steel frame, with Steeltex on each side with a thin layer of cement sprayed inside and outside, forming the finished surfaces. This building was completed a year or so ago, new projects propose equally original structural methods. No, Wright is still capable of contributing something to the development of architecture.

The third legend that has grown up around Wright, the most widespread, his predilection for building expensive houses for the wealthy is equally false as any one who has glanced through a collection of illustrations of his buildings and projects and read his writings must admit. It is true that many of the executed buildings designed by him are relatively expensive houses. His first office experience after leaving the University of Wisconsin was with an architect whose practice consisted almost entirely of domestic work, and as Henry Russell-Hitchcock points out in this book there was a division of designing labour in the Adler and Sullivan office by which Wright handled the domestic work. Further, his own first commissions were houses, carried out after office hours while still working for Adler and Sullivan. As was usual in the 90's most of his clients were fairly well-to-do people who wanted homes for themselves and their families. As early as 1895, however, Wright designed two blocks of working-class flats, and although he does not regard a flat as a satisfactory dwelling he has stated that he would rather solve the problem of designing the low-cost dwelling than any other. It were tedious to list Wright's non-domestic work, but it certainly does not all consist of clubs for multi-millionaires. In the special number of the ARCHITECTURAL FORUM devoted to his work published last year projects for co-operative housing for industrial workers and for public housing were illustrated. Wright has always shown himself prepared to spend at least as much effort in designing houses for working people as for those with a full purse. 'Where creative effort is involved, there are no trivial circumstances.'

Whether Wright is a great architect or merely a poor artist has nothing to do with the three legends discussed above. There is, however, evidence enough in his work to suggest that throughout the more than sixty years of his practice of architecture, he has shown a sensitiveness to technical developments, a willingness to adventure, and a constant pre-occupation with the refining of his work, which is in striking contrast with the work of many other founders of contemporary architecture. Much can be learned from the constant effort of an original mind to satisfy contemporary building needs even if his personal expression is not always acceptable. The appearance of this volume, which includes illustrations of most of his important buildings and projects is especially welcome today when there is a renewed interest in his work. Ignorance can no longer be an excuse for denying his achievement. Henry Russell-Hitchcock, once his bitter critic, has written an admirable analysis which accompanies the illustrations. The English edition is the original one published in America in 1942, and it is a pity that some of the interesting projects, both large and small, of the last six years could not have been added for this edition. R. L. TOWNSEND [A]

Regency Furniture, 1795-1820, by *Margaret Jourdain*. 2nd ed. 11 in. by 8½ in. xv + 188 pp. incl. pls. + front. Country Life. 1948. £2 2*s*.

This is a revised and enlarged version of the first edition, which was published in 1934. The illustrations have been augmented by a number of interesting pieces, adding considerably to the usefulness of the book for student, collector and dealer alike.

There are more pages of illustrations than text; the latter being planned as a series of short introductions to the illustrations, which are divided up into sections—the Greek revival, Furniture of Thomas Hope, Egyptian revival, Chinese taste, Materials and processes, and then follow the various types of furniture—chairs, tables, bookcases, etc.

This is the only authoritative work on English Regency Furniture, and as a pictorial representation it would be difficult to improve upon. The reviewer feels, however, that a more complete and interesting book for the student would have resulted if the author had treated her theme from the viewpoint of the social and economic background of the time, thereby describing why this furniture fitted so well the outlook of our early 19th century ancestors. Also a brief review of the original setting of Regency furniture—the types of Regency houses and villas, their interior decoration and the colour schemes in favour—would have been useful.

The furniture student today is also interested in quality and how it affects design. Why, for example, are the several pieces of Regency furniture which are at Hinchingbrooke, compared with the majority of the other furniture illustrated, of the highest quality craftsmanship? R. W. SYMONDS [L]

Building Science. Papers prepared for the Architectural Science Board of the R.I.B.A. [By M. Hartland Thomas and others.] Edited by *D. Dex Harrison*. 9¾ in. ix + 196 pp. + pls. Allen and Unwin. 1948. £1 1*s*.

The high quality of the papers read at Architectural Science Board lectures has been the object of frequent comment. Many of the lectures provided an opportunity for giving up-to-the-minute information on scientific aspects of architecture. Some of the earlier ones, given towards the end of the war, were not fully reported at the time, and such reports as appeared were not available to many members. It was, therefore, decided to reprint a collection of the papers. This has now been done, but in preparing them for issue in book form Mr. Harrison has carefully edited the material to avoid overlap of information and also has had the papers brought up to date by the original authors.

The resulting book is attractively presented and gives useful information over a very wide range of subjects, though it is not intended to be a comprehensive treatment of all aspects of building science such as might be expected from an ordinary text book. It is made perfectly clear that both the editor and the Science Board are aware of the danger of building science being considered an end in itself. Mr. Hartland Thomas places the subject in a proper perspective in his paper entitled *Architecture: a Bridge between Art and Science*, which, coming first in this book, acts as a stimulating introduction to what follows.

While it is unfortunate that present-day difficulties of publishing have delayed the appearance of this book it still provides an up-to-date collection of material to which reference would otherwise be difficult.

C. C. HANDISYDE [A]

The Principles of Structural Mechanics, &c., by *Percy J. Waldram*. 3rd ed. 7¾ in. xxiv + 384 pp. + folding pls. text diags. Batsford. 1948. 18*s*.

Here is a third and thoroughly revised edition of a well-known text book first published in 1912. It includes a completely new section on the principles of structural design in reinforced concrete.

The Approach to Architecture, by *Martin T. Briggs*. (County College Books.) 7½ in. 14 pp. text illus. Geo. Allen and Unwin. *S*948. 6*s*.

This little book is one of a new 'County College' series, under the general editorship of Mr. J. H. Newsom, designed presumably for young people in their late 'teens. It is quite frankly an architectural primer, and fits in somewhere between the Frys' *Architecture for Children* and Pevsner's *Outline of European Architecture*. It is written with a disarming simplicity, safely steering a middle course between archness and donnishness. Only thus could the whole of its vast subject (principles of design, history of architecture, building procedure, building types, town planning) be skimmed in seventy small pages without inducing vertigo in writer and reader alike. The book is enlivened by some provoking generalizations, and some modest and unmannered sketches by the author. But to those who are looking for an introduction to architecture which manages to dispense with the services of our old friends Commodity, Firmness and Delight, I have regretfully to report another disappointment. LIONEL BRETT [A]

Review of Construction and Materials

This section gives technical and general information. The following bodies deal with specialized branches of research and will willingly answer inquiries.

The Director, The Building Research Station, Garston, near Watford, Herts. Telephone: Garston 2246.

The Director, The Forest Products Research Laboratory, Princes Risborough, Bucks. Telephone: Princes Risborough 101.

The Director, The British Standards Institution, 28 Victoria Street, Westminster, S.W.1. Telephone: Abbey 3333.

The Technical Manager, The Building Centre, 9 Conduit Street, W.1. Telephone: Mayfair 8641-46.

Ideal Home Exhibition. The Daily Mail Ideal Home Exhibition (1 March to 26 March, 1949, at Olympia) was intended to interest the general public, but there were several displays of particular interest to architects.

Entering by the Hammersmith Road entrance the visitor saw 'Exhibition Terrace', a three-storey block erected by John Laing and Son for the Ministry of Health, showing a bed-sitting room flat for one person, a three-storey town house for a family of seven; a maisonette for a small family; and a two-room flat for a childless couple.

Flanking this terrace was the Unity House, by Unity Structures, Ltd.; the Davis House, by Davis Estates, Ltd.; the Hawksley S.G.S. house, by A. W. Hawksley, Ltd.; and the Berg house, described as a modern cottage style residence, by E. and L. Berg, Ltd.

From other exhibits two are selected for comment in this JOURNAL, on the stands of Ascot Gas Water Heaters, Ltd., and Locks, Ltd., respectively.

Ascot Balanced Flue Heater. This heater is at present under development at the Ascot Research Laboratories, but a prototype was displayed on the stand. It is an instantaneous multi-point water heater, but does away with the usual cone draught diverter and vertical flue outlet, and all that is seen is a rounded-top casing fixed against the wall. The products of combustion are led away through a horizontal duct, hidden by the casing and passing through the wall to a special slotted terminal. Surrounding this exhaust terminal is another, also slotted, which allows air to pass through another duct leading to the bottom of the heater; the incoming fresh air and the exhaust gases therefore enter and leave at the same external point, thus there is no trouble in fixing the heater in enclosed or inadequately ventilated spaces.

The pilot light can be lit by opening a hinged port in the casing, and the pilot and main cocks are operated by a single rotary control, which is interlocked with the hinged cover of the lighting port, so that there is no likelihood of a blow-back, which might occur if the port were opened when the main burner is alight.

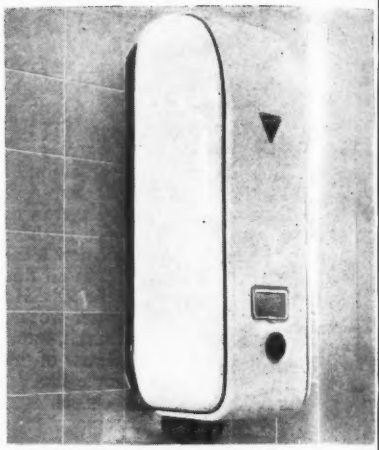
This balanced flue principle has enabled Messrs. Ascot to produce a neat appliance which takes up less room than the present type and yet gives the same service.

The Ingersoll Limpet Window Lock. Insurance companies are worried about the number of burglaries that take place in which the burglar cuts the glass and releases the usual window fastener. There are devices on the market to overcome this, but the Ingersoll Limpet seems to do so in a very unobtrusive way. In the case of metal windows it consists of a peg and a lock. The peg is attached to the shutting stile of the casement by screwing it on a special-shaped screw of which the head is hidden when the casement is closed. The peg projects on the room side and to secure the casement it is only necessary to push the lock on to the peg, when it automatically locks and cannot be removed without the key. The lock, of course, projects partly over the frame and partly over the stile. The casing of the lock is cone and oval shaped, to make it difficult for a burglar to use grips. The lock can also be applied to fanlights, wood casements and sliding sashes, roof lights, and cupboards. Further information can be obtained from Messrs. Locks, Ltd., of 262 Brompton Road, London, S.W.3.

Building Research, 1946. Under this title the D.S.I.R. have recently published a report on the work of the Building Research Station during 1946. It contains a report of the Building Research Board and another by the Director of Building Research. The report of the Board mentions the need for making the Station's work more effectively known in the industry, and a recommendation is that a new section should be formed at the Station to deal with technical publicity, film work, exhibitions, lectures, refresher course, and visitors—of whom there were over 1,600 during the year 1946.

The report of the Director deals in detail with the investigations carried out by the Station, under the headings: (1) materials, (2) building constructions, (3) design and performance of structures, (4) soil mechanics, (5) efficiency of buildings, and (6) fire resistance research. Other subjects are the post-war study committee and the inter-departmental committee on house construction; inquiries and special investigations; codes of practice and British Standards; library, publications and lectures, and appendices giving the staff, committees, and publications. There are seventeen illustrations.

The number of inquiries received during 1946 was 2,852, made up of 786 from architects and professional consultants; 57(from builders and contractors; 485 from merchants and manufacturers; 382 from Government departments; 295 from loca authorities; 173 from private individuals 154 from professional or industrial institutions; and 7 from the technical press.



The Ascot Balanced Flue Heater at the Idea Home Exhibition (see col. 1)

An interesting special investigation deal with a Norwegian inventor's idea for eradicating dry rot from brick or stone walls by heating up to 40 degrees centigrade by means of an electric hot-plate. The trials showed that it was effective over the 1 metre square area covered by the hot-plate.

The pamphlet is published by H.M. Stationery Office, price 1*s.* 6*d.*

The British Colour Council. An interior decoration Design Centre has been opened by the British Colour Council at their headquarters, 13 Portman Square, London, W.1. The main purpose of the centre is to ensure that British furnishing goods become known in both the home and foreign markets for their good design and colour as well as for excellence of manufacture. To this end the Council is preparing a dictionary of colours to ensure that a specified shade can be exactly matched in matt and glossy surfaces and in dyed textiles; this work is well advanced, though the date of publication is not yet known. The Design Centre is also organizing meetings of designers, exhibitions and courses of instruction. The organizing secretary is Miss Margaret E. Phesey, B.A.

B.S.1448 : 1948. Nomenclature of decorative metallic finishes. Contents: Specification, appendix giving B.S. designation. Illustrated in colour. Price 2*s.* 6*d.* net, post free.

B.S.1455 : 1948. British-made plywood for building and general purposes. Contents: specification, method of determining moisture content, dry test for adhesion, test for resistance to moisture, meaning of the term 'appreciable resistance to separation'. Illustrated. Price 3*d.* net, post free.

Notes and Notices

NOTICES

Eighth General Meeting, 5 April 1949, at 6 p.m.

The Eighth General Meeting of the Session 1948-49 will be held on Tuesday 5 April 1949, at 6 p.m. for the following purposes:

To read the minutes of the Seventh General Meeting held on 8 March 1949.

To present the Royal Gold Medal 1949 to Mr. Howard Robertson, M.C., S.A.D.G. [*F*].

(Light refreshments will be provided before the meeting.)

The One Hundred and Eleventh Annual General Meeting, Tuesday 3 May 1949

The One Hundred and Eleventh Annual General Meeting will be held on Tuesday 3 May 1949, after the Special General Meeting on that day, for the following purposes:

To read the minutes of the Eighth General Meeting held on 5 April 1949; formally to admit new members attending for the first time since their election.

To receive the Annual Report of the Council and Committees for the official year 1948-49.

(Copies of the Annual Report will be sent to members in April.)

It will facilitate answers to questions if members will give the Secretary prior notice of any questions which they may wish to ask. Notices should be in the Secretary's hands not later than 23 April. This will not preclude the right of members to ask questions on the Annual Report without having given prior notice.

To nominate candidates (two members) for the office of Hon. Auditors for the ensuing year.

To receive the list of attendances at the Council during the Session.

(Light refreshments will be provided before the meeting.)

Amendment to Bye-law 62: Special General Meetings, 3 and 24 May 1949

A Special General Meeting will be held on Tuesday 3 May 1949, at 6 p.m.—prior to the Annual General Meeting—for the following purposes:

To consider the following resolutions put forward by the Council:

(1) That the following Bye-law 62 be *deleted:*

62. In the case of the Royal Gold Medal the Council shall announce to the members at a General Meeting, at least four weeks before the Meeting of the Council at which the election is to be made, the name of the person they propose to submit to His Majesty as a fit recipient of that honour. The award shall be by Resolution of the Council.

and the following Bye-law *substituted:*

62. The election of the person proposed for submission to His Majesty as a fit recipient of the Royal Gold Medal shall be by Resolution of the Council.

(2) That the necessary steps be taken to obtain the sanction of the Privy Council to the amendments to the Bye-laws to give effect to the foregoing resolution.

In the event of the above resolutions being passed, a Special General Meeting will be held on Tuesday 24 May 1949, at 6 p.m., prior to the Ordinary General Meeting on that date for the purpose of confirming those resolutions in accordance with the provisions of Clause 33 of the Charter of 1887.

Session 1948-49. Minutes IV

At the Fourth General Meeting of the Session 1948-49, held on Tuesday 8 February 1949 at 6 p.m.

Mr. Michael Waterhouse, M.C., President, in the Chair.

The meeting was attended by about 300 members and guests.

The Minutes of the Third General Meeting held on 11 January 1949 were taken as read, confirmed and signed as correct.

The President delivered his address to architectural students, and Mr. Anthony Chitty, M.A., A.M.T.P.I. [*A*], read his review of the work submitted for the Prizes and Studentships, 1949.

On the motion of Mr. R. E. Enthoven [*F*], President of the Architectural Association, seconded by Mr. R. Furneaux Jordan [*F*], Principal of the Architectural Association, a vote of thanks was passed to the President and Mr. Chitty by acclamation, and was briefly responded to by them.

The presentation of prizes was then made by the President in accordance with the Council's Award.

The proceedings closed at 7.40 p.m.

Session 1948-49. Minutes V

At the Fifth General Meeting of the Session 1948-49, held on Tuesday 22 February 1949 at 6 p.m.

Mr. Michael Waterhouse, M.C., President, in the Chair.

The meeting was attended by about 270 members and guests.

The Minutes of the Fourth General Meeting held on 8 February 1949 were taken as read, confirmed and signed as correct.

The following members attending for the first time since their election were formally admitted by the President:

AS FELLOW

G. L. G. Ross.

AS ASSOCIATES

J. B. Anderson, A. W. C. Barr, H. J. Blake, N. H. F. Brazier, D. W. Burford, R. E. Carter, E. W. D. Clunies-Ross, P. F. Croft, T. A. B. Dempster, Miss A. M. Dixon, F. S. Drake, G. D. Frankish, L. B. Ginsburg, W. E. Greaves, J. L. Greenwood, W. H. Groves, A. F. J. Hannaford, P. H. Hatton, R. H. Haydon, H. S. Haynes, K. Z. Hussain, S. M. Igel, S. J. C. Kinsman, C. S. Knight, Ezra Levin, J. V. Lewis, V. G. Mackinnon, J. G. McLeish, H. I. K. Mair, H. J. Mein, K. G. Miller, J. L. Moreton, H. S. Page, N. K. Purnell, G. C. Pyne, K. W. C. Reed, H. M. Reid, C. G. L. Shankland, G. F. B. Simkins, Miss A. F. Smith, J. E. Smith, W. H. G. Stenson, M. G. F. Ventris, Marshall Walker, Miss Shirley Warwick, J. E. West, V. W. Worley, Peter Wolfenden.

AS LICENTIATES

A. N. Anderson, H. J. Dicketts, A. M. Millwood, L. P. Murphy, H. H. G. Roberts, E. H. Swaine.

Professor Anthony Blunt, C.V.O., Director of the Courtauld Institute, having read a paper on *Mannerism in Architecture*, a discussion ensued, and on the motion of Dr. R. Wittkower, Reader in the History of Art at the University of London, seconded by Mr. John Summerson, F.S.A. [*A*], Curator of Sir John Soane's Museum, a vote of thanks was passed to Professor Anthony Blunt by acclamation and was briefly responded to.

The proceedings closed at 7.50 p.m.

Session 1948-49. Minutes VI

At the Sixth General Meeting of the Session 1948-49, held on Tuesday 1 March 1949 at 6 p.m.

Mr. Michael Waterhouse, M.C., President, in the Chair.

The meeting was attended by about 250 members and guests.

The Minutes of the Fifth General Meeting held on 22 February 1949 were taken as read, confirmed and signed as correct.

The following members attending for the first time since their election were formally admitted by the President:

AS FELLOW

Mr. Walter Goodesmith, Mr. R. A. Jensen.

AS ASSOCIATES

Mr. G. J. Beard, Mr. Gustav Mandl, Miss C. M. Quigley.

Sir Thomas Sheepshanks, K.C.B., K.B.E., Permanent Secretary to the Ministry of Town and Country Planning, having read a paper on *The Town and Country Planning Act: Some Implications for Architects*, answered questions on the subject and on the motion of Mr. R. J. Gardner-Medwin, B.Arch., Dip. C.D. (Lvpl.), A.M.T.P.I. [*A*], Chief Architect and Planning Officer to the Department of Health for Scotland, seconded by Mr. Peter Shepheard, B.Arch. (Lvpl.), A.M.T.P.I. [*A*], a vote of thanks was passed to Sir Thomas Sheepshanks by acclamation, and was briefly responded to.

The proceedings closed at 7.45 p.m.

Session 1948-49. Minutes VII

At the Seventh General Meeting of the Session 1948-49, held on Tuesday 8 March 1949 at 6 p.m.

Mr. Michael Waterhouse, M.C., President, in the chair.

The meeting was attended by about 400 members and guests.

The Minutes of the Sixth General Meeting, held on 1 March 1949, were taken as read, confirmed and signed as correct.

The following members attending for the first time since their election were formally admitted by the President:

AS HONORARY ASSOCIATE

F. G. Baker.

AS FELLOW

E. B. Tyler

AS ASSOCIATES

H. F. S. Bale, Miss E. D. Beazley, H. W. K. Boyd, J. C. Butters, A. E. Crocker, Miss V. H. Crichton, T. S. S. Dale, Miss E. Grindley, J. A. Hepburn, H. B. Leather, K. C. Macnair, D. J. Petty, A. D. Shepherd, F. W. Singleton, M. G. Straus, Miss P. R. Tindale, J. G. Tinker, A. W. V. White.

Mr. H. S. Goodhart-Rendel, Mus.B. (Cantab.), M.A. (Oxon.) [*F*], having read a paper on *Rogue Architects of the Victorian Era*, a discussion ensued, and on the motion of The Viscount Esher, M.B.E. [*Hon. A*], seconded by Mr. G. Grey Wornum [*F*], a vote of thanks was passed to Mr. Goodhart-Rendel by acclamation, and was briefly responded to.

The proceedings closed at 7.35 p.m.

Town and Country Planning Act, 1947—Determination of Development Charge

At their meeting on 8 February 1949 the Council resolved that the attention of members be directed to the fact that a development charge under the Town and Country Planning Act, 1947, may affect a client's decision as to whether or not he will proceed with a project. Information in respect of such charges is necessary in the early stages of a scheme, and the client should be recommended to take the advice of a valuer before the architect has proceeded with detailed drawings. An architect who is himself a valuer can, of course, advise his client.

Note Issued by the Central Land Board

Code for Cubing Buildings

The following code has been jointly prepared by the Royal Institute of British Architects and the Royal Institution of Chartered Surveyors. The Board are very grateful to receive this working code, and will adopt it themselves in their administration as a general working rule. It is pointed out that the code is not a legal instrument; but it should not be departed from except in unusual circumstances.

Interpretation

1. 'Building' includes any structure or erection and any part of a building as so defined, but does not include plant and machinery comprised in a building.

2. The code is to apply to cube measurements to be made for the purpose of the Third Schedule and Section 112 of the Act, and for the purposes of the Development Charge Exemption Regulations. The Institutions point out that it is not designed for 'costing' purposes.

3. The Act requires the cubic content of a building to be ascertained by external measurement.

Cubing of Buildings

4. *General Principles*

(*a*) *Lateral measurement.* To be measured to the external main wall faces at each floor level, whether above or below ground.

(*b*) *Bottom measurement.* To be measured to an assumed depth of 1 ft. below the top surface of the lowest floor or 1 ft. below the average ground level around the enclosing walls, stanchions, piers or the like, *whichever is the lower*, for each part of the building.

(*c*) *Roof measurement.* In the case of a flat roof, to be measured to an assumed height of 2 ft. above the top surface.

In the case of a pitched, lean-to or curved roof, the actual cubic content to the outside face is to be measured provided that the cubic content shall in no case be less than it would have been if the roof were flat and the cubic content were measured as for a flat roof.

Lantern lights, skylights, parapet walls and *normal* chimney stacks above the roof are not to be added to the cube.

(*d*) *Explanatory notes.* Light wells and basement areas are not to be cubed unless covered.

Terraces and pavements are not to be cubed.

5. *Buildings and Parts of Buildings with Open Sides and/or Tops.* In the case of buildings and parts of buildings with open sides and/or tops (such as football stands, dutch barns, timber drying sheds, roofed balconies, canopies, roofed loading bays, porches, external metal fire-escape staircase, etc.) the general principle will be to 'clad' notionally the open side and/or top to ascertain the notional cubic content.

Canopies outside the curtilage of the site (such as cinema canopies over the public footwalks) will not be cubed.

6. *Factory and Similar Chimneys.* Isolated chimneys will be measured to the extent of their actual external cubic content taken from an assumed depth of 1 ft. below the average ground level or the bottom of the flue, whichever is the lower.

Chimneys forming part of the structure of a building will be measured to the extent of their external cubic content above roof level.

7. *Structures and Erections which cannot easily be cubed.* In the case of structures or erections which it is impracticable theoretically to 'clad' (in the manner described in paragraph 5), it shall be permissible to reckon an increase of 10 per cent in the extent of the particular existing development calculated in the manner most appropriate in the circumstances as if it were an increase of 10 per cent of its cubic contents.

This principle is designed to be applied to such buildings as cranes, gantries, jetties, wireless masts, lattice-work bridges, boundary and retaining walls and boreholes.

Cessation of Membership

Under the provisions of Bye-law 21 the following has ceased to be a member of the Royal Institute:

As Fellow. Cyril C. Ruwald.

R.I.B.A. Reception, 29 April 1949

There will be a Reception at the Institute on Friday 29 April 1949, from 8.15 p.m. to midnight. The President and Mrs. Waterhouse will receive the guests in the Henry Florence Hall from 8.15 to 9 p.m. and there will be dancing from 9 p.m. until midnight.

Tickets are 15*s.* each. In the first place members will be restricted to one guest each but they may give the names of further guests for whom tickets will be supplied should it prove that accommodation will be available. Application for tickets (with remittance) should be made as early as possible.

Full evening dress is preferred but in view of present-day conditions, members will be welcome in dinner jackets or uniforms or lounge suits.

British Architects' Conference, Nottingham, 29 June-2 July 1949

The Conference programme will be sent to members with the April issue of the JOURNAL. In the meantime the following brief notes will enable members to see what arrangements are being made.

Wednesday 29 June. Members arrive at Nottingham. In the evening members will be the guests of the Nottingham, Derby and Lincoln Architectural Society at an Informal Reception at Victoria Station Hotel.

Thursday 30 June. 10.30 a.m. Inaugural Meeting. Address of welcome by the Lord Mayor of Nottingham. Address by the President, R.I.B.A., Mr. Michael Waterhouse, M.C. Paper on Housing by Mr. J. H. Forshaw, M.C., M.A. [*F*], Chief Architect and Housing Consultant to the Ministry of Health.
2.30 p.m. Garden Party and Conference photograph at Wollaton Hall by kind permission of the Lord Mayor and City Council.
9 p.m. Civic Reception at Nottingham Castle.

Friday 1 July. 10.30 a.m. Paper on Housing by Mr. T. Cecil Howitt, D.S.O. [*F*].
9.45 a.m. Alternative whole-day tours to Lincoln and Haddon Hall.
2.15 p.m. Alternative half-day tours.
8 p.m. Conference dinner at Nottingham University.

Saturday 2 July. Alternative morning visits.

Details of hotel accommodation were given in the January and February issues of the JOURNAL.

COMPETITIONS

Proposed Fleet Air Arm Memorial of the 1939-45 War at Lee-on-Solent, Hampshire

The Imperial War Graves Commission invite architects who are ex-serving full time members of His Majesty's Forces to submit designs in competition for the Fleet Air Arm Memorial of the 1939-45 War, which they propose to erect on a site on the sea front at Lee-on-Solent.

Assessor: Mr. Edward Maufe, R.A. [*F*].

Premiums: £100, £60 and £30.

Last day for submitting designs: 20 May 1949.

Conditions may be obtained from The Secretary, Imperial War Graves Commission. 32 Grosvenor Gardens, S.W.1. The deposit is £1. Applicants for the Conditions *must* state:

(*a*) Their architect's registration number.

(*b*) The branch of H.M. Forces in which they served.

BOARD OF ARCHITECTURAL EDUCATION

The Tite Prize and Soane Medallion Competitions 1949

The attention of intending competitors is called to the fact that the closing date for the submission of forms of application for the Tite Prize is 1 April 1949.

The Tite Prize, a certificate and the sum of £100, for which no particular Style is prescribed, is confined to *Probationers* and *elected Students* of the R.I.B.A. and elected Students of Dominion Allied Societies who have passed the R.I.B.A. Intermediate or equivalent examination, or produce certificates from responsible architects to the effect that they have reached the required standard. Students who have passed the R.I.B.A. Final or equivalent examination or who will have passed the R.I.B.A. Final or equivalent examination at the time of the *en loge* competition are not eligible to compete.

Under the new arrangements for the competition only one *en loge* competition will be held. This will take place in London and at non-Metropolitan centres on Wednesday 4 May 1949.

The Soane Medallion and the sum of £120 is confined to members of the R.I.B.A. and of the Allied Societies Overseas, and elected Students of the R.I.B.A. and of the Allied Societies Overseas, who have passed the R.I.B.A. Final or equivalent examination or who have produced certificates from responsible architects to the effect that they have reached the required standard.

The *en loge* competition for the Soane Medallion will be held on the same day as that for the Tite Prize, i.e. Wednesday 4 May 1949. The closing date for the submission of forms of application is 4 April 1949.

Forms of application for admission to the competitions may be obtained at the R.I.B.A., 66 Portland Place, London, W.1.

Examiners for the R.I.B.A. Intermediate, Final and Special Final Examinations, 1949

The following have been appointed by the Council of the R.I.B.A. to act as Examiners for the year ending 31 December 1949: Mr. D. H. Beaty-Pownall, Mr. J. Brandon-Jones, Mr. Eustace H. Button, Mr. H. T. Cadbury-Brown, Mr. Reginald W. Cave, Mr. L. A. Chackett, Mr. R. Ll. Davies, Mr. R. A. Duncan, Mr. L. W. Elliott, Mr. C. J. Epril, Mr. J. S. Foster, Mr. P. G. Freeman, Mr. F. E. Green, Mr. P. J. B. Harland, Mr. R. F. Hennicker, Mr. J. Kenneth Hicks, Mr. C. I. G. Highet, Mr. J. F. Howes, Mr. J. R. Leathart, Miss J. G. Ledeboer, Mr. T. J. Lynch, Mr. D. H. McMorran, Mr. Denzil Nield, Mr. J. W. Parr, Mr. Brian Peake, Mr. Michael Pattrick, Mr. E. M. Rice, Mr. L. F. Richards, Mr. Thomas Ritchie, Mr. Ernest Seel, Mr. H. G. C. Spencely, Mr. Cecil Stewart, Mr. Rodney Tatchell, Mr. M. C. Tebbitt, Mr. F. J. B. Watkins, Mr. Charles Woodward.

R.I.B.A. Final and Special Final Examination, December 1948

The questions set at the Final and Special Final Examination held in December 1948 have been published, and are on sale at the Royal Institute price 1*s.* (exclusive of postage).

R.I.B.A. Diploma in Town Planning

Mr. Clifford E. Plews [*A*], having passed the qualifying Examination, has been awarded the R.I.B.A. Diploma in Town Planning.

ALLIED SOCIETIES

Changes in Officers and Addresses

South Eastern Society of Architects—Kingston-upon-Thames District Chapter. Hon. Secretary, Mr. William H. Cutmore [*A*], 62 River Way, Ewell, Surrey (Kingston 2121, Extension 22.)

Royal Institute of the Architects of Ireland. Hon. Secretary, Mr. Austin P. Meldon, M.R.I.A.I., Honorary Treasurer, Mr. C. Aliaga Kelly, M.R.I.A.I., both of 8 Merrion Square, N. Dublin.

Royal Architectural Institute of Canada—Ontario Association of Architects. President, Mr. Charles Lenz, M.R.A.I.C., 42 James St. North, Hamilton, Ontario. *Province of Quebec Association of Architects.* President, Mr. J. C. Meadowcroft, 1154 Beaver Hall Square, Montreal.

Liverpool Architectural Society—Southport Architectural Society. President, Mr. Leonard Rigby [*F*]. *North Staffordshire Architectural Association.* President, Mr. Clifton Edwards [*F*], 3 Brook Street, Stoke-on-Trent.

Wessex Society of Architects—Gloucestershire Architectural Association. President, Lt.-Col. Eric Cole [*F*]. Hon. Secretary, Mr. J. L. Jones [*A*], 96 Brooklyn Road, Cheltenham.

Essex, Cambs and Herts Society of Architects—West Essex Chapter. Chairman, Mr. D. A. Thomerson [*A*], 76 Finsbury Pavement, London, E.C.2.

South Eastern Society of Architects: Tunbridge Wells Chapter, Maidstone Group

The activities of the Maidstone Group during the past year have included lectures, informal evenings and visits to works and places of architectural interest.

At the Annual Meeting held in January, Mr. A. B. Knapp-Fisher, Vice-President, R.I.B.A., gave an encouraging talk on the work of architects. Members were reminded that although the profession is still 'Cinderella' yet there is important work for all architects to do. Mr. Knapp-Fisher concluded his talk by saying 'It is a part of our function as architects to show the public that we are sound practical men and to bring home to it that vital design and good building are in large part measures of a country's well-being, and a decline in a nation's architecture is visible evidence of its moral and economic impoverishment.'

On 10 February the Secretary of the Institute, Mr. C. D. Spragg, C.B.E., visited Maidstone on the occasion of a Chapter meeting being held there. More than 40 members assembled in the evening to hear Mr. Spragg talk about the activities of the R.I.B.A. in particular as they affect members outside London. The Group very much appreciated the opportunity given to it as a part of a large local society of showing its loyalty to and its interest in the affairs of the Institute.

Essex, Cambridge and Hertfordshire Society of Architects' Annual Dinner

The Annual Dinner of the Society was held on 28 January 1949 at the City Livery Club, London, when the President, R.I.B.A., Mr. Michael Waterhouse, M.C., was the Guest of Honour. The dinner, the first to be held since the war, marked the twenty-first anniversary of the Essex Society, which was joined two years later by Cambridge and Hertfordshire.

It was unfortunate that dense fog prevented the President of the Society, Mr. R. C. Foster, M.B.E., M.C. [*F*], and Mrs. Foster from arriving, and the position of Acting President was filled by Mr. R. O. Foster [*A*], Chairman of the West Essex Chapter.

In proposing the toast of the Society, Mr. Waterhouse congratulated the Society both on its twenty-first birthday and on the active way in which it was carrying out its work. He spoke of the great architectural opportunities in the area, which contained five new towns and several L.C.C. estates. As President of the Architects' Benevolent Society, he gave his thanks for the contribution of £240 which the Essex, Cambridge and Hertfordshire Society had made towards A.B.S. funds during the year just past. In reply to the toast, the Acting President expressed the regret and anxiety of all present at the unavoidable absence of their President, and also at the absence of Mrs. Waterhouse through ill-health. He, too, referred to the twenty-first anniversary, saying that the Essex Society was formed in Sir Charles Nicholson's house, and that Sir Charles had sent a message that he hoped the Society would keep the traditions of good fellowship upon which it was founded.

The toast of the Patrons of Architecture was proposed in an extremely witty speech by the Rev. Canon J. L. Fisher, M.A., F.S.A., Hon. Member of the West Essex Chapter, who spoke of the great need for architects today and of the patronage of the Local Authorities and large corporate bodies. He suggested that if architects were in any fear of being nationalized they might be encouraged by the experience of dentists! Replying to the toast, Mr. P. Astins, J.P., C.A., Chairman of the Essex County Council, spoke of the new growth of taste and discernment among the general public.

Mr. D. A. Wilkie [*F*], Chairman of the Hertfordshire Chapter, proposed the toast of the Guests, which was responded to by Mr. Hubert Ashton, M.C., M.A., D.L., C.C., Chairman of the Essex County Cricket Club.

Among the one hundred and fifty-two members and guests present were Mr. C. D. Spragg C.B.E., Secretary, R.I.B.A., the Chairman of the Hertfordshire County Council, the Vice-Chairman of the Cambridgeshire County Council, the Mayor of Watford, the Mayor of Wanstead and Woodford, the County Architects of Hertfordshire, Essex and Kent, Mr. Geoffrey de Freitas, M.P., Under Secretary of State for Air, Mr. C. R. Allison, Headmaster of Brentwood School, Mr. Hugh R. Montgomery, Director of the Building Exhibition, Mr. W. J. Jerram, Chairman, N.E Region London Master Builders' Association, and Mr. Walter Beecroft.

Royal Society of Ulster Architects' Annual Dinner

A large gathering of members and friends attended the Society's Annual Dinner in the Grand Central Hotel, Belfast, on 3 February 1949. Deep regret was felt at the absence through illness of the guest of honour, Mr. Michael Waterhouse, M.C., President, R.I.B.A. Owing to the imminence of the Northern Ireland General Election the Prime Minister and members of the Cabinet were unable to attend. Sir William Neill, M.P., Lord Mayor of Belfast, was unable to attend owing to indisposition.

Dr. F. P. Montgomery, M.C., M.B., Chairman of the Northern Ireland Hospitals Authority, in proposing the toast 'The Royal Institute of British Architects and its Allied Society the Royal Society of Ulster Architects', expressed his regret at not having the opportunity of meeting Mr. Waterhouse, but stated that he was sure that everyone was pleased to find that their good friend, Mr. C. D. Spragg, C.B.E., Secretary, R.I.B.A., had come to fill the breach. In referring to the proposal to set up a Chair of Architecture at Queen's University, Belfast, Dr. Montgomery stated that a School of Architecture would be of inestimable value to young architects and to the profession of architecture. The sum of £10,000 was available for this purpose, and he felt that the Society should make a united effort to raise the remainder. Mr. A. F. Lucy, F.R.I.A.I., President of the Royal Society of Ulster Architects, in reply stated that the endowment of a Chair would require an estimated £70,000, and felt that an appeal to industrialists would have beneficial results.

Mr. C. D. Spragg also responded on behalf of the Royal Institute of British Architects.

He stated that the Royal Institute would watch with keen interest the progress of the establishment of a chair of Architecture at Queen's University. He voiced the gratitude of the R.I.B.A. for the valuable work of the Royal Society of Ulster Architects in making themselves responsible for conducting the Intermediate, Final and Special Final Examinations in Belfast. Mr. Spragg referred to the Royal Institute's acceptance of the invitation of the Ulster Society to hold the British Architects' Conference at Belfast in 1951 and was confident that a large number of architects from the other side of the water would be present to join in the celebrations of the Society's Jubilee.

Mr. J. S. Munce [*L*], proposing the toast of 'The City of Belfast' referred to its growth during the past 150 years. In the middle of the 19th century the layout showed foresight on the part of those responsible, as could be seen in the lines and widths of the streets constructed during that era. Later on, the very rapid increase in the size of the city had caused a decline in the standards formerly adopted, a decline for which the present generation had to pay in more respects than financial. The Corporation would, he was certain, have the wholehearted support of the Society in every endeavour it made towards improvement of the city in which, despite its many defects, all its inhabitants took a certain pride.

The High Sheriff of Belfast, Councillor J. H. Norritt, J.P., replied to this toast. Captain J. R. Young [*F*] proposed the toast of 'Our Guests'. This was responded to by Mr. Frank McArdle, M.Sc. [*F*], President of the Royal Institute of the Architects of Ireland, who is a past President of the Royal Society of Ulster Architects and an active member of its present Council. Dr. N. Agnew, M.Sc., F.R.I.C.S., on behalf of the Royal Institution of Chartered Surveyors, and Mr. H. E. Campbell, M.I.C.E., on behalf of the Institution of Civil Engineers, also replied.

Sheffield, South Yorkshire and District Society of Architects and Surveyors holds Dinner-Dance

A very successful dinner-dance was held on Thursday 10 February at the Royal Victoria Hotel, Sheffield, when some 130 members and guests were received by the Society's President, Mr. C. S. Sandford, F.R.I.C.S., and Mrs. Sandford, and also Mr. A. W. Kenyon, C.B.E. [*F*], Vice-President, R.I.B.A., and Mrs. Kenyon.

After the dinner, Mr. C. S. Sandford, the President of the Society, proposed the toast of the R.I.B.A. coupled with the Sheffield, South Yorkshire and District Society of Architects and Surveyors, to which Mr. A. W. Kenyon replied and stressed the importance of the proper training of those entering the profession to meet the great responsibilities which had to be carried by the architect in present-day practice.

This was the first dinner-dance held by the Society in place of the more formal dinner of pre-war days, and in view of its success it is hoped that this function may become an annual event in the Society's winter programme.

Manchester Society of Architects' Annual Dinner

This was held at the Midland Hotel, Manchester on 25 February and was attended by the President, R.I.B.A., Mr. Michael T. Waterhouse, M.C. [*F*], who responded to the toast 'The R.I.B.A. and its Allied Societies', which

was proposed by Mr. P. G. Fairhurst, J.P., M.A. [*F*], President of the Manchester Society of Architects.

The toast of 'The City of Manchester' was proposed by Mr. G. B. Howcroft, M.C., M.A. [*F*], and was responded to by Alderman Miss Mary Kingsmill Jones, O.B.E., J.P., the Lord Mayor of Manchester. The Lord Mayor of Manchester is leading a deputation to the Minister of Health to ask for permission to proceed with the building of Manchester's Free Trade Hall.

'The Guests' was proposed by Mr. A. W. Jones [*A*] and responded to by Mr. P. M. Oliver, C.B.E., B.A., President, Royal Manchester Institution.

Mr. C. D. Spragg, C.B.E., Secretary, R.I.B.A., attended the function.

The Royal Incorporation of Architects in Scotland

The R.I.A.S. 1949 Annual Convention is being held in Dundee on 3 and 4 June.

GENERAL NOTES

London University. B.A. (Hons.) Degree in Architecture

The University of London announce that alterations have recently been made in the regulations relating to the External B.A. Degree in Architecture.

Hitherto, registration was restricted to those members who had qualified through a recognized institution approved by the University. The new regulations are now extended to all members of the Royal Institute of British Architects who have qualified by passing the External R.I.B.A. Final Examination.

Before registration for the Degree is accepted by the University applicants must:

(1) Have matriculated at the University (or gained exemption therefrom—usually through the School Certificate).

(2) Pass the Intermediate Examination in Arts of the University consisting of: (*a*) Two languages (one of which must be either Latin or Greek). (*b*) History of Greek and Roman Architecture (one paper). (*c*) Drawing Test (usually one of the Orders of Greek and Roman Architecture); or as an alternative The History of Greek and Roman Art. (One Paper). (*d*) The submission of two sheets of studies of the Orders of Architecture.

Further information may be obtained from the External Registrar, The Senate House, London University, W.C.1.

Informal Conferences on Architectural Education

In December 1947 by way of experiment an informal conference on Architectural Education was held at the Leicester School of Architecture. Attendance was confined neither to heads of schools, nor to senior staff, nor was it intended that any policy should be laid down. The conference was envisaged rather as an open forum in which aims and objectives, teaching methods, programmes, administrative problems, and other matters of common interest could be freely discussed and results assessed.

Three schools only were represented in addition to the hosts—Leeds, Nottingham and Manchester—and observers were present from the Ministry of Education. Each delegation contributed a small selection of drawings, which were exhibited for comment and criticism. A wide range of educational subjects was discussed, and the interchange of views was extremely stimulating. By general assent it was agreed that a second conference be held—in December last (1948)—and again Leicester was selected as the centre. A more definite programme was arranged on this occasion, with Building Construction, The Thesis, and Decoration and Colour Theory the main topics under review.

Four schools each sent representatives—Hull, Leeds, Nottingham and Manchester—and the delegates assembled on Tuesday evening 21 December. On Wednesday morning 22 December, Mr. Eden (Leeds) gave a short paper on Construction, taking as a basis the Architectural Science Board's Report. The methods adopted at Leeds were then outlined and comments were invited from each of the delegations—an instructive discussion followed. After lunch Professor Cordingley (Manchester) opened the session with a paper on *The Thesis*. Contributions from other delegates revealed the wide variety of opinion on this subject, and the divergence of practice in the schools generally.

Tea was provided *in situ*, and the conference continued thereafter with Decoration as the bone of contention. Mr. F. H. Cork, instructor in Colour Theory at the Nottingham School, gave an illustrated review of his methods. Opinion on the teaching of colour decoration, and, in fact, on its inclusion in the curriculum seemed to be sharply divided and lively duels ensued.

At 7.30 p.m. the delegates returned to their hotel for dinner. Thursday morning was devoted entirely to a discussion of the drawings exhibited. A demonstration of visual aids was omitted in favour of a general meeting to discuss future plans. It was unanimously agreed that a third conference should be held in November 1949 at Buxton.

Materially there is little to show for the two conferences; no minutes were kept, no manifestos issued, and no reports circulated. There can be little doubt, however, as to their value. They served a useful purpose in bringing together members of staff who hitherto have had few opportunities of meeting, and what is perhaps most important, they permitted an interchange of views not solely at professorial level. One of the most encouraging aspects of both conferences has been the interest shown by lecturers and assistants—most of whom willingly paid their own expenses—and who, probably for the first time, were able to see, discuss and assess work done at other schools—a most salutary and stimulating experience.

Import of Architectural Books and Periodicals Published Abroad

Confirmation has been obtained from the Import Licensing Department of the Board of Trade of the following concessions in regard to the import of architectural books and periodicals from abroad.

Any individual may import single copies of books published abroad without any specific licence. On application to his bank the necessary foreign exchange to pay for the book in question will be made available. The concession is limited to single copies of books imported by post.

Any individual may become a subscriber to a periodical published abroad without any specific licence and can obtain the necessary foreign exchange by application to his bank on the appropriate form E.1. Again, such periodicals must be imported by post.

Overseas Correspondence Course in Town Planning

The School of Planning offers tuition by correspondence for the External Examinations of the Town Planning Institute. The course, which is in English, is specially designed for men and women overseas, and is not available to residents in the British Isles. The fee for the whole course, including text-books, tuition and criticism, is £20 sterling. Applications for further particulars and enrolment form should be sent to: The Secretary, School of Planning and Research for Regional Development, 34/35 Gordon Square, London, W.C.1, England.

'The Post-Reformation Kirks of Scotland' by Dr. A. L. Drummond

In the title heading to the above article at page 172 in the February JOURNAL Dr. Andrew L. Drummond was shown as 'F.R.I.A.S.', whereas he is an *Honorary* Fellow of The Royal Incorporation of Architects in Scotland.

Minehead Development Plan

In 1948 the Minehead Urban District Council appointed Dr. Thomas Sharp, M.A., M.T.P.I. [*L*], as their Planning Consultant, to prepare a report and development scheme for the coastal area of the Urban District. Dr. Sharp's report and plan have now been received by the Minehead Urban District Council, who have decided that they are to be published in the form of an illustrated brochure.

The Chadwick Trust Travelling Scholarship in Sanitary Science or Municipal Engineering and Hygiene.

The Chadwick Trustees invite applications for a Travelling Scholarship of £600 a year, tenable for one year, to be awarded next July; the Scholarship to be in Sanitary Science or Municipal Engineering and Hygiene.

The trustees may approve a course of study shorter than for one year, in which case the value of the scholarship would be reduced, approximately, *pro rata*.

The object of the scholarship is to enable the holder to travel abroad to study, either generally or in some particular aspect, the methods adopted in different countries for the prevention of disease and the improvement of public health, or the sanitary administration and engineering applied in urban or rural areas.

Candidates must be British subjects of either sex, between twenty-two and thirty years of age, who have graduated in a British University or can produce evidence of attainments or of intellectual equipment proving them to be capable of methodical study and research.

Application forms and conditions of the award may be obtained from The Clerk to the Chadwick Trustees, 204 Abbey House, Westminster, S.W.1 (stamped, addressed foolscap envelope necessary), to whom the form must be returned by 31 March 1949.

Cricket

At an informal Dinner held on 25 November 1948 at the Horse and Dolphin Hotel, London, twenty playing members were present to enjoy an off-season reunion to discuss future fixtures and elect a small committee.

The following members were duly elected to serve on the committee: Mr. Douglas Taylor (Chairman), Mr. C. A. R. Norton, Mr. R. R. Fairbairn (Hon. Sec.), and Mr. S. B. Caulfield.

At the ensuing committee meeting it was decided to hold a dinner annually to which all members interested in cricket would be welcome.

The following fixtures were provisionally arranged for 1949 :

Thursday 23 June *v.* The Architectural Association at Elstree.

Sunday 10 July *v.* R.I.C.S. at Elstree.

Sunday 24 July *v.* The Blue Circle Sports Club at Snaresbrook.

Members wishing to play in any of these matches should communicate with the Hon. Secretary, R. R. Fairbairn, M.C. [*A*], 61 Piccadilly, London, W.1, who will be pleased to forward full particulars in due course. Early application is requested.

Obituaries

Lady Ethel Unwin, widow of the late Sir Raymond Unwin, President of the R.I.B.A. 1931 to 1933 and the "Father" of modern town planning, died on Tuesday 1 March, aged 83. Sir Raymond died in 1940 while lecturing at the Columbia University, U.S.A.

Lady Unwin lived at 'Wyldes', North End, Hampstead, one of the oldest private houses in London, dating back to the 15th century. It was formerly a dairy farm.

One of the best-informed and well-read women of her generation, Lady Unwin was extremely active even in her advancing years. Up to last November, when she was taken ill, she carried on charitable work, being particularly interested in Quaker Relief (she was an elder of the Society of Friends) and was at one time president of the Women's International League for Peace and Freedom. In order to be able to help those less fortunate, she led a spartan existence, even to the extent sometimes of going without meals.

Her only daughter, Mrs. C. N. Hitchcock, lives in the United States, but her daughter-in-law, Mrs. Edward Unwin, had lived with her for several years.

Reginald Arthur Rix [*A*], until 1942 senior partner in the firm of Rix and Rix, Burnham, Bucks, that practice since being carried on by his son, Mr. H. Terrell Rix [*L*], died on 22 September last, aged 81.

Mr. Rix was trained at Whitgift School, Croydon, and was articled in 1883 to Mr. Charles Henman [*F*] in London, becoming a member of the A.A. the same year. At the expiration of his articles with Mr. Henman he remained as Assistant for two years, and in 1887 became Managing Assistant to Mr. J. Douglas Mathews [*F*]. He was elected Associate in 1893.

In 1892, after qualification, Mr. Rix started practice in Budge Row, London, and in 1919 he moved to Burnham, Bucks. In 1933 he was joined in partnership by his son, Mr. H. Terrell Rix, retiring from the practice in 1942, the practice being continued by his son as sole principal.

The practice was an extensive general one carrying domestic, commercial, ecclesiastical, transport and country house work. In partnership with his son, Mr. Rix was an early pioneer in the design of reinforced concrete buildings.

In 1922 he was elected Chairman of the Bucks Architectural Association, and in 1927-29 was President of the Berks, Bucks and Oxon Architectural Association.

Besides his building and other activities, Mr. Rix has also written a good deal in architectural and motor trade papers (he was a specialist in motor service stations) and published several books. His contributions to ARCHITECTURAL DESIGN AND CONSTRUCTION were the 'Country House' series. Some years ago Mr. Rix had illustrations in the A.A. SKETCH BOOK, THE DAILY MAIL IDEAL HOMES BOOK, THE BUILDER and THE ARCHITECT.

Ronald Thomas Lewis [*L*], architect to Messrs. Doulton and Co. Ltd., Burslem, Stoke-on-Trent, died last May.

He was apprenticed to his father, John Lewis, of Newcastle-under-Lyme, who died before Mr. R. T. Lewis's training was completed so Mr. Lewis then spent some years in the pottery industry, working for Messrs. Wood and Goldstraw of Tunstall, Stoke-on-Trent, usually concentrating on factory layout. He left Messrs. Wood and Goldstraw to continue as full-time architect with Messrs. Doulton and Co., which position he held at the time of his death.

Mr. Lewis had a wide working knowledge of the pottery industry, and used this knowledge on factory layout, as well as developing and patenting several machines now widely used in the pottery industry. He travelled in Germany, France, Czechoslovakia, the United States and Canada to study factory layouts and production methods.

Of a retiring disposition he took no active part in politics or public affairs, his hobby being oil-painting; he was an accomplished violinist.

Herbert W. Cash [*F*], who lived at Hillingdon, Middlesex, died on 16 December last in the Royal Masonic Hospital, Ravenscourt Park, from bronchial-pneumonia following a major operation. He was 61.

Mr. Cash designed the premises for the Express Dairy Co., High Street, Uxbridge, and for many years was architect to the Victoria League and to Earl Winterton's Chapman Estate.

He designed Beverley Library, Hull, and during the war years supervised the erection of air raid shelters in the Borough of Islington. He was well known in the Middlesex County Courts as an expert witness.

A Freemason, Mr. Cash was past master of the Eastcote Lodge of Freemasons, and he was at one time honorary secretary of North Hillingdon Musical Society. Prior to practising from Hillingdon he had offices in Southampton Street, Bloomsbury, and later in Great James Street, Bedford Square, commencing in practice in 1925.

Walter E. Hiner [*A*], aged 33 at the date of his death on 22 November last, had his architectural studies interrupted by five years national service, and he did not qualify to become an Associate until 1947. It was never possible for him to enter into practice on his own, although this was his dearest wish and the goal to which he was striving in less restricted times. He was enthusiastic about his profession and entered many competitions, the last being for the design of the new T.U.C. building.

Mr. Hiner was trained at the Bartlett School of Architecture, and took his B.A.(Arch). From 1946 to the date of his death he was employed as an architectural assistant at the Ministry of Works, Cambridge.

Frederick W. Rowe [*L*], aged 67, died on 26 November last. He was educated at King's School, Worcester, Barbourne College and Hereford College, and commenced private practice in 1920 in Worcester in partnership with Mr. A. V. Rowe and Mr. F. H. Heppel [*F*]. During this association his principal architectural works were the Oldbury Drill Hall, a large temporary office building block at Fishponds, Bristol, for the Ministry of Works, extensions to the factory of the Morgan Crucible Co. Ltd., at Worcester, St. Swithin's Institute Buildings, and numbers of dwelling-houses and housing schemes in Worcestershire. He was surveyor to St. Swithin's Charities, and an Associate of the Royal Institution of Chartered Surveyors.

Mr. F. H. Heppel [*F*], A.R.I.C.S., of 38 Foregate Street, Worcester, succeeds to the practice.

Daniel W. MacMath [*F*] was a partner in the firm of Lennox and MacMath [*F*/*F*], of 140 Blythswood Street, Glasgow. He was trained in the office of the late Lindsay Miller, of Glasgow, and completed his studies at the Glasgow School of Art. For some years thereafter he acted as assistant to Thomson and Sandilands, Glasgow, and in 1906 he commenced practice with Mr. Gavin Lennox [*F*], an association which lasted till Mr. MacMath's death on 1 December last, aged 68.

The work carried out during their association included schools at Balornock, Glasgow, Gartcosh and Bridgend, Lanarkshire, and at Barrhead, Renfrewshire, and housing schemes in Lanarkshire and at Barrhead. In recent years Mr. MacMath had devoted a considerable part of his time to cinema and theatre work. He served for a time on the Council of the Royal Incorporation of Architects in Scotland and at various times on the Council of the Glasgow Chapter.

The practice is being carried on by Mr. Gavin Lennox [*F*] in partnership with his son, Mr. G. S. A. Lennox [*A*].

Ernest Stewart Charlton [*A*] planned and erected omnibus stations and shelters in all parts of the country; he supervised the extensions to Paddington Station, and was architect to the West Yorkshire Road Car Company from 1933 to the date of his death on 15 December 1948 at the age of 64. Mr. Charlton practised in London from 1924-33, and in Harrogate, Yorkshire, from 1933 to 1948.

Albert Schofield [*F*], President of the Southport Architectural Society, practised from 1900 to the date of his death, 25 December 1948, at 413 Lord Street, Southport.

He went to Johannesburg for three years when a young man and studied colonial architecture there. Returning to England in 1897 and commencing practice in Southport, he always practised on his own account and specialized in branch bank work and the erection of theatres in North-West Lancashire. His principal architectural works were the Little Theatre, Southport, the theatre at Berwick-on-Tweed, and the Birkdale Cemetery Chapel and Lodge, and branch banks for the 'Big Five' in and around the town of Southport.

Mr. Schofield died aged 77.

Alexander John Ogston [*L*] died suddenly on 27 December last, aged 40. He was a captain in the Royal Engineers and was home on leave from Trieste at the time of his death, and a short time before, in apparently normal health, he had been motoring with his parents and sister.

Joining the Army during the war, he enlisted as a private, and had spent the last four years in Italy Before joining the Army, Captain Ogston was an assistant on the staff of the County Architect, Essex County Council, whose staff he joined in 1929.

Captain Ogston was a member of the Essex, Cambridge and Hertfordshire Society of Architects. He was a well-known acting member of Chelmsford Operatic and Dramatic Society, fond of painting, music, drama and the ballet.

Frederick Lindus Forge [*F*], architect of the offices for Charles Churchill, Ltd., Old Street, City, and of the factory extensions and many of the shops of Achille Serre, Ltd. (cleaners and dyers), was born in 1874 and died on 27 December last. He practised in Woodford, Essex, for five years at the commencement of his career, and then from 1900 to the date of his death in Bury Place, Holborn.

John Carrington Stockdale [*Ret. L*], aged 87, died on 4 January last.

After serving as assistant to several London architects Mr. Stockdale commenced private practice in 1901. His principal works were residential flats in Upper Marylebone Street, London, St. Michael's College, East Grinstead, alterations to All Saints' Church, Highgate, East Finchley Parish Hall, and the restoration of St. Stephen's Church, North Finchley.

He was a member of the A.A., which he joined in 1889, being made a Life Member in 1939.

James Milne [*A*], who died on 5 January, aged 55, was recently made a partner in the firm of Miller and Black [*F*] of Glasgow, in whose ser-

vice he had practised since 1912. Trained in the Glasgow School of Art and later in the School of Architecture there, Mr. Milne was admitted Associate in 1921, and did considerable valuation work for his firm in war damage repairs and for the Glasgow Building Society. He specialized in ecclesiastical and factory architecture.

Mr. Milne was for twenty-five years head of the continuation classes in building construction at the Glasgow High School.

John Charles Stephen Mummery [*Ret. A*]. The death of John C. S. Mummery, aged 86, was announced on 17 January. He lived in Bournemouth, but when actively engaged in architecture he practised in London, specializing in hospital, public institution and mental home buildings. When architect to the Edmonton Union and the Tottenham Burial Board he built the Edmonton Infirmary Nurses' Home.

He ceased practice in 1933. Prominent for many years in pictorial photography, Mr. Mummery was an Honorary Fellow of the Royal Photographic Society, of which society he was for two terms President.

George D. Macniven [*F*] died on 18 January at his Edinburgh home, aged 70.

Formerly chief architect of the Department of Health for Scotland, Mr. Macniven retired from Government service four years ago and became consulting architect to the Scottish Veterans' Garden City Association—which is providing houses for disabled ex-Servicemen in many parts of Scotland—and an appeals inspector for the Department of Health.

A pupil of the late Sir George Washington Browne, Mr. Macniven studied at the Edinburgh School of Applied Art, and before joining the Local Government Board for Scotland as a temporary architect in 1915 he was a partner in an Edinburgh firm of architects. He became an established Civil Servant in 1918 after he had supervised the erection of houses for the Admiralty and the Ministry of Munitions during the first world war.

He first occupied the post of assistant architectural inspector, and in 1919 was appointed principal architect and Housing Commissioner for the Scottish Board of Health. When the Board became the Department of Health for Scotland in 1929 he was made Deputy Chief Architect and Housing Commissioner. He was made chief architect in 1942.

A keen sportsman, Mr. Macniven was a well-known tennis player in his youth, and later became an expert curler, representing Scotland at the game. He was a keen golfer.

Samuel Grundy [*F*], who practised in Ulverston, was trained in his father's office there and succeeded to an architectural practice which started about the year 1790. From 1936 Mr. Grundy was partnered by his son, F/Lt. J. A. Grundy, who was killed in action in the late war. The second son, F/Lt. D. Grundy, D.F.C., was also killed in action.

Mr. Grundy was responsible for the erection of the Barrow Drill Hall, Ulverston Market and General Post Office and many large residential properties in the Ulverston area.

The practice carried on by Mr. Grundy under the name of J. W. Grundy and Son at Glendorgal, Grasmere, is now closed.

Joshua Clayton [*F*] was trained at Darlington Technical College and in the offices of Kitching and Lee, Darlington, from 1906-10, then becoming assistant to Mr. J. S. Stout, Whitehaven, and just prior to the first World War an assistant in the District Valuer's Office, Middlesbrough.

After serving in the Royal Artillery during the first World War he commenced practice in Darlington, and in 1938 took into partnership Mr. T. Victor Deas [*A*]: they practised as Joshua Clayton and Deas at High Row Chambers, Darlington.

Prior to, and during his, association with Mr. Deas, Mr. Clayton's principal architectural works were the head offices of the *Birmingham Gazette*, Sir Edward Walker Homes, Darlington, new premises for Middleton-in-Teesdale Co-operative Society, a number of modern cinemas and factories in County Durham, and the North Riding of Yorkshire, the Army Formation College at Welbeck Abbey, Civilian Clothing Demobilization Depot at the York Infantry Barracks and, during the late war, as a Major R.E. he supervised the layout of large army camps, hospitals and other army buildings for the Northern Command. The firm has also built licensed premises in Darlington and district, and a number of private residences.

From 1940-46 Mr. Clayton served with the Royal Engineers, from 1942-46 being Planning Officer, Northern Command Headquarters, York.

An active participator in local government Mr. Clayton was a member of the Darlington Town Council from 1931-46, and in 1945 he had to decline the Council's invitation to be Mayor of Darlington owing to military duties.

Mr. Clayton had been an Associate member of the Royal Institution of Chartered Surveyors since 1912.

David W. Campbell [*L*], A.R.I.C.S. The death has occurred of Mr. David W. Campbell, who lived at Lockerbie, Scotland. He was 75.

A native of Dalmeny, where his father was clerk of works on Lord Rosebery's estates; he was educated at Stewart's College, Edinburgh. His first architectural appointment was on the Kinmount and Hoddam estates of Mr. E. J. Brook, and in 1902 he was appointed clerk of works on the Castlemilk estates of the late Sir Robert Buchanan-Jardine.

Mr. Campbell retired from active practice in 1931, but during the war years again acted as clerk of works on the Castlemilk and Dormont estates.

Clare Arnold Clayton-Greene [*F*], well known in Sunderland, died suddenly in that town on 28 February aged 74 years. He started practising in 1899 and became a Fellow, R.I.B.A., in 1913. He served in the first world war as War Department Valuer, and, although having retired in 1936, he returned to do work for the War Damage Commission in the second world war.

Mr. Clayton-Greene won several competitions, including St. Gabriels Church and the Masonic Temple in Sunderland. He designed several schools and housing schemes for public authorities in Northumberland and Durham.

Notes from the Minutes of the Council

MEETING HELD 8 FEBRUARY, 1949

The late Mr. W. G. Newton [*F*]: The President spoke of the loss which the Council had suffered through the death of Mr. W. G. Newton, President of the Wessex Society of Architects, and representative of the Wessex Society on the Council.

It was resolved that the sincere sympathy of the Council be conveyed to Mrs. Newton and the other relatives of the late Mr. Newton.

Membership of Council: The Secretary reported that the Wessex Society of Architects had appointed Mr. S. E. Urwin [*F*] as their representative on the Council for the remainder of the Session in place of the late Mr. W. G. Newton [*F*].

The Honorary Associateship: Sir Arthur Lawrence Hobhouse has accepted the Council's invitation to be nominated for election as an Honorary Associate.

The Honorary Corresponding Membership: Mr. William Wurster (U.S.A.) has accepted the Council's invitation to be nominated for election as an Honorary Corresponding Member.

R.I.B.A. Distinction in Town Planning: Professor W. B. Edwards, M.A., B.Arch. [*F*], has accepted the Council's invitation to receive the award of the R.I.B.A. Distinction in Town Planning.

Appointments

(A) British National Committee, International Union of Architects: Mr. Kenneth J. Lindy [*F*], in place of Mr. Frederick Gibberd [*F*].

(B) R.I.B.A. Representative on Court of Governors of Nottingham University: Mr. R. E. M. Coombes [*F*].

(C) R.I.B.A. Architecture Bronze Medal, Essex, Cambridge and Hertfordshire Society of Architects: R.I.B.A. Representative on Jury: Mr. A. W. Kenyon (Vice-President).

(D) British National Committee on Building Documentation: Additional R.I.B.A. Representative: Mr. Denzil Nield [*A*].

(E) Ministry of Works Committee on Economy in the Use of Steel: R.I.B.A. Representative: Mr. Mark Hartland Thomas [*F*], Chairman of the Architectural Science Board.

Architects' Registration Council of the United Kingdom: (*a*) Under the provisions of the Architects' (Registration) Act, 1931, the Institute is entitled to nominate nineteen members to serve on the Architects' Registration Council for the year ending March 1950.

The following members have been appointed: Mr. Harold Anderson [*F*], Mr. Arthur Bailey [*F*], Mr. Martin S. Briggs [*F*], Mr. A. C. Bunch [*F*], Mr. Cecil Burns [*F*], Mr. H. Conolly [*F*], Mr. Romilly B. Craze [*F*], Mr. Kenneth M. B. Cross [*F*], Mr. J. E. K. Harrison [*F*], Mr. Cecil Kennard [*F*], Mr. A. B. Knapp-Fisher [*F*], Mr. E. D. Jefferiss Mathews [*F*], Mr. S. W. Milburn [*F*], Mr. Denis Poulton [*F*], Mr. A. L. Roberts [*F*], Lieut.-Colonel V. H. Seymer [*F*], Mr. H. G. C. Spencely [*F*], Mr. Sydney Tatchell [*F*], Mr. F. C. Wakeford [*L*].

(*b*) Under the same statute, the Institute is entitled to nominate four members to serve on the Admission Committee of the Council for the year ending March 1950.

The following members have been reappointed: Mr. Romilly B. Craze [*F*], Mr. C. J. Epril [*F*], Mr. Denis Poulton [*F*], Mr. A. T. Scott [*F*].

Simplification in Licensing Procedure and Standardization of Forms: The President reported that the representations made through the National Consultative Council of the Building and Civil Engineering Industries had been considered by the Ministry of Works, and also by the Treasury. The latter had agreed to take up the matter of standardization of forms with local authority associations. In regard to simplification of procedure for licensing, the Council felt that further examination was needed, and referred the matter to the Practice Committee for study.

Ministry of Education Working Party on Building Regulations: The Council approved

and confirmed the action taken on their behalf as a matter of urgency by the School Design and Construction Committee in preparing and submitting a memorandum on the building regulations under the Education Act, 1944, to the Ministry of Education.

Alterations to Rules of Allied Societies: Formal approval was given to amendments to the rules of the Birmingham and Five Counties Architectural Association and the Hampshire and Isle of Wight Architectural Association, respectively.

Professional Subscriptions and Income Tax Allowances: The Council approved a proposal that the Institute should, in concert with the Royal Institution of Chartered Surveyors, and certain other Societies, approach the Chancellor of the Exchequer with a view to obtaining income tax relief on professional subscriptions paid by all salaried architects.

Sculpture, Mural Painting and the other Arts in Relation to Architecture: The Secretary reported that the Hertfordshire County Council had allotted a proportion of the costs of their new schools building programme for the purpose of adornment of school buildings with sculpture, murals, etc. The Council received this report with keen appreciation, and it was agreed to express the Institute's satisfaction at this enlightened step by the Hertfordshire County Council.

Royal Observatory, Hurstmonceux: The Secretary submitted a letter from the Civil Engineer-in-Chief of the Admiralty, in reply to a request for information regarding the new buildings for the Royal Observatory, Hurstmonceux, and he also drew the attention of the Council to the recent questions and answers in the House of Commons on this subject.

It was left to the President to take such action as might seem to him appropriate in the light of further developments and after discussion with the Royal Fine Art Commission.

Methods of Measuring the Cubic Content of Buildings: At the suggestion of the Chairman of the Central Land Board, a joint committee of the Institute and the Royal Institution of Chartered Surveyors have drawn up a memorandum on methods of measuring the cubic content of buildings for purposes connected with the Town and Country Planning Act, 1947. The method evolved is purely for purposes connected with development values, and is not related to the traditional system of cubing for costing purposes. The memorandum which had been approved by the Council of the R.I.C.S. was approved for submission to the Central Land Board with a view to publication by them for general guidance.

Junior Organization: The Council considered the report of the Junior Organization Committee on the result of their discussions with representatives of the Architectural Students Association in regard to proposals to promote closer contact between the Royal Institute and the general body of students.

After detailed examination, the Council referred the report back to the Committee for further consideration, it being their view that any link between the Royal Institute and the students should leave the latter with the greatest possible freedom.

Maximum Selling Price of New Houses: The Council approved a recommendation of the Practice Committee that representations be made to the Ministry of Health with a view to securing the exclusion of the architect's fee from the maximum selling price of a new house.

Compensation (Defence) Act, 1939: The Council approved a recommendation of the Practice Committee that representations should be made to the Treasury calling attention to the factors which should reasonably be entertained in assessing claims for professional fees as part of the cost of making good damage under Section 2 (1) (*b*) of the Compensation (Defence) Act, 1939.

This recommendation arose from a study by the Committee of a number of cases where the requisitioning authority had disallowed claims for architects' fees on the ground that the services of an architect were unnecessary. It was decided that the Treasury should be asked to agree that the test should be, firstly, if the circumstances were such as to justify a prudent owner seeking professional advice and, secondly, that professional guidance was necessary where competitive tenders had to be obtained for works of reinstatement involving appreciable sums of money.

Supply of Drawing Office Materials: It was agreed to make representations to the Board of Trade with a view to securing some improvement in the available quantity and quality of drawing office materials.

Defence Regulation 56A: It was agreed to make representations jointly with A.R.C.U.K. to the Minister of Works with the following objects:
1. That Regulation 56A should be amended so that paragraphs 6 and 8 would provide in addition to the present defence, that it shall be a defence for any person charged with an offence to prove that he did not in fact know of or suspect the breach and could not by the exercise of reasonable diligence have so known or suspected or prevented such breach.
2. That the time of instituting proceedings should be reckoned from such a date as would enable the case to be heard by a court of summary jurisdiction and thus avoid the person charged appearing in the dock.

Membership: The following members were elected: as Honorary Associate, 1; as Fellows, 10; as Associates, 55. Students: 262 Probationers were elected as Students.

Applications for Election: Applications for election were approved as follows: *Election 5 April* 1949: as Honorary Associate, 1; as Fellows, 8; as Associates, 52; as Licentiates, 8. *Election July* 1949 (*Overseas Candidates*): as Fellows, 3; as Associates, 2.

Applications for Reinstatement: The following applications were approved: as Associates, Charles Edward Longdin, Robert Albert Walter, Vivian Ware; as Licentiates, Leonard Etherington, John Sidey [*Retd. L*]; as Retired Licentiate, Bertie Cooper.

Resignations: The following resignations were accepted with regret: John Saxon Snell [*F*], Mrs. Phyllis Bunch [*A*], George Bernard Holland Hoole [*Retd. A*], Harry Lennox Anderson [*L*], Reginald Royston Cornforth [*L*], Donald MacAlister [*L*], Reginald Hartington Hutchings [*L*], James Lloyd Worssell [*L*], Ernest Austin Collett [*Retd. L*].

Applications for Transfer to Retired Members' Class under Bye-law 15: The following applications were approved: as Retired Fellows: Sydney Poyntz Bush, Major Hubert Christian Corlette, Athelstan Linton Iredale, Arthur Blomfield Jackson, Arthur Stratton, Sir James Grey West; as Retired Associates: Max Goldstein, Francis Henry Northbrook Crew Kemp, John Sowerby Milner; as Retired Licentiates: Herbert Charles Clark, Francis George Glyn Robertson, William Shackell.

Membership Lists

ELECTION: 8 FEBRUARY 1949

The following candidates for membership were elected on 8 February 1949:

AS HON. ASSOCIATE (1)

Baker: Frederick George.

AS FELLOWS (10)

Dyer: Leonard Stacey [*A* 1936], Watford.
Harvey: John Lyne, M.C. [*A* 1921].
Innes: John, Dip.Arch. (Edin.) [*A* 1938], Edinburgh.
Jensen: Rolf Arthur, B.Arch. (Hons.), A.M.T.P.I. [*A* 1934].
Morris: Noel Ennever Seton [*A* 1937].
Wyatt: Leslie Herbert William [*A* 1920].

and the following Licentiates who are qualified under Section IV, Clause 4 (*c*) (ii) of the Supplemental Charter of 1925:

Dodd: Harry Davenport, Southport.
Dodds: Archibald Kirkwood.
Harrison: Samuel, Cannock.
Smith: Reginald Victor.

AS ASSOCIATES (55)

Anderson: John Baskerville.
Barclay: Alexander Miller, Dundee.
Bell: James Beattie, Edinburgh.
Bramer: Noel Kenneth Scott, Beaconsfield.
Breese: David Alexander (Capt. R.E.), B.Arch. (Hons.) (L'pool), Liverpool.
Bridgewater: Bernard Sydney, Stourbridge.
Broadhurst: Frederick Harold, Manchester.
Burdis: John Francis Calbreath, Newcastle-upon-Tyne.
Churton: John, Middleton.
Crichton: Vivian Hilda (Miss).
Dale: Thomas Simon Savage, M.A., Oxford.
Dand: James Brignell, Newcastle-upon-Tyne.
Dickinson: Peter Allgood Rastall.
Dinwoodie: James Ferguson Dickson, Edinburgh.
Ellis: Eileen Margaret (Miss), Morden.
Evans: Kenneth Charles, Birmingham.
Fairbrother: James Alick, Leeds.
Falconer: George Arthur, Elgin.
Fox: Alfred Scott, Lerwick.
Gott: George Ernest, Sunderland.
Grant: Gordon Collie, Elgin.
Groves: William Henry, Dip.Arch. (Nottm), Blidworth, Notts.
Horne: William Adam, Liverpool.
Houghton: John, Hull.
Knight: Christopher Shirley.
Laing: Kenneth William, Dunning, Perthshire.
Leather: Henry Brian.
McKinstry: Robert James, B.Arch. (Hons.), (L'pool), Banbridge, Co. Down.
Maguire: William Arthur, Dublin.
Mandl: Gustav.
Martin: Richard Brian, Birmingham.
Morrison: Robert Stuart, Perth.
Moss: Arnold, Manchester.
Nicol: James Watt, Edinburgh.
Olins: Fabian.
Parratt: Leslie Richard, Farnham.
Quigly: Clarice Mary (Miss).
Robertson: Margaret Mills (Miss), Dip.Arch. (Dundee), Dundee.
Savi: Victor Robert, Fife.
Scott: Alexander, Dundee.
Sellers: William Gordon, B.Arch. (L'pool) Culcheth, Lancs.
Smith: Haydn William, Oldham.
Smithies: Kenneth William, Liverpool.
Staplin: Jack Hylton.
Stern: Ruth (Mrs.).
Strubbe: John Alexander.
Taylor: Gordon Frederick.

Tindale: Patricia Randall (Miss), Barnet.
Totterdell: Horace Ernest.
Wakelin: Richard Langford, Cardiff.
Walton: Harold Anthony, Northwich.
Warwick: Shirley (Miss).
White: Ronald, Chester.
Wilkie: Robert Andrew, Edinburgh.
Wright: Arthur Francis Stevenson, M.B.E., Dundee.

ELECTION: 5 APRIL 1949

An election of candidates for membership will take place on 5 April 1949. The names and addresses of the candidates with the names of their proposers, found by the Council to be eligible and qualified in accordance with the Charter and Bye-laws, are herewith published for the information of members. Notice of any objection or any other communication respecting them must be sent to the Secretary, R.I.B.A., not later than Monday 4 April 1949.

The names following the applicant's address are those of his proposers.

AS HON. ASSOCIATE (1)

Hobhouse: Sir Arthur, Hadspen House, Castle Cary, Somerset. Proposed by the Council.

AS FELLOWS (8)

De Segrais: Joseph John [*A* 1933], 25 Duke Street, Manchester Square, W.1; 11 Orme Square, W.2. Frederick Sutcliffe, John Dovaston, B. L. Sutcliffe.

Hope: Arthur Fentem [*A* 1927], c/o War Damage Commission, Whitworth Street, Manchester, 1; 3 Fifth Avenue, Bolton, Lancs. Rupert Medcalf, Gilbert Fraser, J. R. Mewton,

and the following Licentiates who have passed the qualifying Examination:

Archard: Alfred Joseph Hodsdon (Major), 20 Lowndes Street, Knightsbridge, S.W.1; 93 Harford Drive, Watford, Herts. T. E. Scott, H. Bramhill, F. G. Broadbent.

Banks: Edward Harry, Chief Architect's Division, Ministry of Works, Abell House, John Islip Street, S.W.1; 25 Grovewood Hill, Coulsdon, Surrey. W. A. Rutter, W. F. Granger, H. T. B. Barnard.

Courtney-Dyer: Kenneth Patrick James, 29a Aberdeen Place, St. John's Wood, N.W.8; 'The Rosary', Broadway, Herne Bay, Kent. R. J. Harrison, and applying for nomination by the Council under Bye-law 3 (*d*).

Edwards: Sidney Roy (Captain), 6 Princess Square, Plymouth; Ilston, Hoo Meavy, Yelverton, Devon. Lt.-Col. F. J. Taylor, Herbert Jackson, E. U. Channon.

Engle: Bernard, 8 New Square, Lincoln's Inn, W.C.2; 10 Heath Drive, N.W.3. H. L. Bloomfield, Louis Jacob, K. J. Lindy.

Marmorek: Walter Hans, 1 New Court, Temple, E.C.4; 52 Bayswater Road, W.2. C. Cowles Voysey, E. M. Joseph, Raglan Squire.

AS ASSOCIATES (52)

The name of a school, or schools, after a candidate's name indicates the passing of a recognized course.

Beattie: George Copeland (Edin. Coll. of Art: Sch. of Arch.), 13 Ferry Road, Pitlochry. L. S. Stanley, Gavin Lennox, and applying for nomination by the Council under Bye-law 3 (*d*).

Bravington: Fruin Bruce Charles, B.A. [Final], 34 Upper Cheyne Row, Chelsea, S.W.3. A. S. G. Butler, Edward Playne, C. W. Box.

Burton: Reginald Rogerson [Special Final], 'Oakfield', Ashley Road, Hale, Cheshire. W. C. Young, Francis Jones, H. T. Seward.

Bustard: Edward Harcourt, Dip.Arch. (The Poly, Regent Street, London: Sch. of Arch.), 11 Hayes Crescent, N.W.11. J. M. Easton, Howard Robertson, J. S. Walkden.

Cathcart: Stuart Barron [Special Final], 'Hilltops', 5 Eastfield Crescent, Brighton. K. E. Black, S. H. Tiltman, F. F. Howard.

Clay: William Paffard McKinley Keatinge (Arch. Assoc. (London): Sch. of Arch.), Testwood House, Houghton, Stockbridge, Hants. B. H. Peake, L. H. Bucknell, R. F. Jordan.

Davies: Charles Ewart [Special Final], 10 Park House Road, Merry Oaks, Durham. F. Willey, G. R. Clayton, L. S. Stanley.

Day: John Bertram [Final], 53 Cotham Road, Bristol, 6. G. D. G. Hake, E. H. Button, A. F. French.

Doherty: James Anthony (Victoria Univ., Manchester: Sch. of Arch.), Manchester House, Delph, nr. Oldham. Prof. R. A. Cordingley, G. B. Howcroft, Harold Bowman.

Fearon: Patrick Joseph, B.Arch. (Univ. Coll., Dublin, Ireland: Sch. of Arch.), 41 Kimmage Road East, Terenure, Dublin, Ireland. Prof. J. V. Downes, S. S. Kelly, Raymond McGrath.

Gabb: Maurice John [Final], 7 Ribblesdale Road, Sherwood, Nottingham. J. W. M. Dudding, A. E. Eberlin, F. A. Broadhead.

Griggs: Cyril Percy [Final], 108 Arundel Drive, South Harrow, Middx. A. W. Harwood, M. E. Walker, Ronald Ward.

Harington: Raymond Kelston (The Poly., Regent Street, London: Sch. of Arch.), 39 Torridon Road, Catford, S.E.6. J. S. Walkden, D. C. H. Jenkin, George Coles.

Howitt: William Fowler, Dip.Arch. (Dundee) (Dundee Coll. of Art: Sch. of Arch.), 'Barmekin', Cornhill Terrace, Perth, Scotland. John Needham, Louis de Soissons, G. G. Wornum.

Hubble: John Brian [Final], 38 St. George's Square, S.W.1. G. D. G. Hake, Prof. A. E. Richardson, Marshall Sisson.

Hume: Charlotte (Mrs.) (Northern Poly. (London): Dept. of Arch.), 24 Albany Park Road, Kingston-on-Thames, Surrey. Horace Cubitt, T. E. Scott, Frederick Barber.

Hyams: Norman John (Arch. Assoc. (London): Sch. of Arch.), 40 Hyde Park Gate, S.W.7. R. F. Jordan, George Coles, L. H. Bucknell.

James: Peter Geoffrey (Nottingham Sch. of Arch.), 105a Marlborough Road, Beeston, Nottingham. T. C. Howitt, A. E. Eberlin, C. F. W. Haseldine.

Khachadourian: Levon Minas [Special Final], 45 Lillie Road, West Brompton, S.W.6. D. L. Dick, R. M. Piggott, Joseph Vermont.

Kenchington: Martin Herbert (The Poly., Regent Street, London: Sch. of Arch.), Ridgewood, Nancy Downs, Oxhey, Herts. Herbert Kenchington, Peter Moro, J. S. Walkden.

Lamb: Josephine Mary (Miss) (Nottingham Sch. of Arch.), 113 Pierrepont Road, West Bridgford, Notts. E. W. Roberts, Ernest Frear, and applying for nomination by the Council under Bye-law 3 (*d*).

Langrick: Arthur, Dip.Arch. (Nott'ham) (Nottingham Sch. of Arch.), 10 Stanley Street, Worksop, Notts. George Checkley, F. A. Broadhead, J. W. M. Dudding.

Lawson: Peter Frederick John (The Poly., Regent Street, London: Sch. of Arch.), 140 Dunstans Road, East Dulwich, S.E.22. J. S. Walkden, Frankland Dark, F. Q. Farmer.

Livock: Alec Gage (Arch. Assoc. (London): Sch. of Arch.), Meadway, The Ridgeway, Horsell, Woking, Surrey. George Fairweather, G. R. Dawbarn, S. G. Livock.

Lush: Cecil (The Poly., Regent Street, London: Sch. of Arch.), 4 Kerry Avenue, Stanmore, Middx. H. A. Welch, F. J. Lander, J. S. Walkden.

McCormick: John [Final], 123 Ashdale Drive, Mosspark, Glasgow, S.W.2. J. A. Cola, Prof. W. J. Smith, G. F. Shanks.

Martin: Hermione Joan (Miss) [Final], 166 Clarence Gate Gardens, Regents Park, N.W.1. Prof. A. E. Richardson, Prof. H. O. Corfiato, D. du R. Aberdeen.

Mason: Howard Neil, B.Arch. (Hons.) (Lvpl.) (Liverpool Sch. of Arch.: Univ. of Liverpool), 32 Huskisson Street, Liverpool, 8. Prof. L. B. Budden, Prof. William Holford, Frederick Gibberd.

Newcombe: Arthur Sidney, Dip.Arch. (The Poly., Regent Street, London: Sch. of Arch.), 5 Ridge Hill, N.W.11. J. S. Walkden, D. C. H. Jenkin, Walter Goodesmith.

Patten: Ronald Arthur [Final], 22 Hermitage Road, Westcliff-on-Sea, Essex. Niel Martin-Kaye, H. R. Bird, W. S. Hattrell.

Peiris: Peter Henry Wilson [Final], Archæological and Anthropological Museum, Downing Street, Cambridge. Shirley D'Alwis, O. Weerasinghe, C. W. Box.

Potter: Peter, Dip.Arch. (The Poly., Regent Street, London: Sch. of Arch.), 'Byways', 35 Pampisford Road, Purley, Surrey. J. S. Walkden, Joseph Addison, William Crabtree.

Proctor: William Douglas [Final], 8 College Road, Bristol, 8. G. D. G. Hake, Sir George Oatley, E. H. Button.

Radford: John [Special Final], St. Winifred's, Swains Road, Budleigh Salterton, Devon. H. M. R. Drury, H. V. C. Hague, John Bennett.

Ree: James Ramsay, Dip.Arch. (Dundee) (Dundee Coll. of Art.: Sch. of Arch.), 99 Lilybank Crescent, Forfar, Angus. John Needham, J. R. McKay, A. H. Mottram.

Rhys-Davies: Walter William Miall (Captain) (Welsh Sch. of Arch.: The Tech. Coll., Cardiff), 4 Gnoll Avenue, Neath, Glamorgan. Lewis John, T. A. Lloyd, C. F. Jones.

Rice-Oxley: Mervyn Douglas (Arch. Assoc. (London): Sch. of Arch.), Bansha, Plat Douet Road, Jersey, C.I. R. F. Jordan, S. G. Livock, H. G. Cherry.

Richards: Leonard John (Welsh Sch. of Arch.: The Tech. Coll., Cardiff), c/o Miss Reece, 24 St. James's Road, Hereford. Lewis John, T. A. Lloyd, C. F. Jones.

Richards: Reginald Anthony Kennard (Welsh Sch. of Arch.: The Tech. Coll., Cardiff), 5 Llanover Street, Cadoxton, Barry, Glam. Lewis John, T. A. Lloyd, C. F. Jones.

Ruth: Robert Alaster Hugh (The Poly., Regent Street, London: Sch. of Arch.), c/o The Mainway, Chorleywood, Herts. J. S. Walkden, J. K. Hicks, S. P. Taylor.

Sinclair: Kenneth Stanley Innes (The Poly., Regent Street, London: Sch. of Arch.), 'Three Ways', Wadhurst, Sussex. J. S. Walkden E. M. Fry, Miss J. B. Drew.

Smith: Christopher Stuart Beale (Birmingham Sch. of Arch.), 3 St. Mary's Crescent, Leamington Spa. T. M. Ashford, P. B. Chatwin, Rolf Hellberg.

Stuart: William Livingstone (Dundee Coll. of Art.: Sch. of Arch.), 11 Gannochy Edge, Perth, Scotland. John Needham, W. G. Walmsley, H. Lidbetter.

Sweetapple: Ernest Frank [Special Final], 'Merl Croft', Sid Road, Sidmouth, Devon. John Challice, E. V. Beer, John Bennett.

Vaughan-Ellis: George Rodney [Final], 45 Donegall Street, Fulham, S.W.6. J. K. Hicks, T. F. Ford, E. C. Scherrer.

Ventris: Lois (Mrs.) (Arch. Assoc. (London): Sch. of Arch.), 47 Highpoint, North Hill, N.6. R. F. Jordan, L. H. Bucknell, H. G. Goddard.

Vokes: Wyndham Melhuish (Welsh Sch. of Arch.: The Tech. Coll., Cardiff), 47 St. Michaels Road, Llandaff, Cardiff. Lewis John, Colin Jones, T. A. Lloyd.

Walker: Brenda Anne (Miss) [Final], Roseleigh, Oakfield Glade, Weybridge, Surrey. Applying for nomination by the Council under Bye-law 3 (*d*).

Warren: Robert Lancelot, M.C. (Nottingham Sch. of Arch.), 85 Kirkby Road, Sutton-in-Ashfield, Notts. T. C. Howitt, A. E. Eberlin, Percy Bartlett.

Webber: Alexander MacKenzie (Liverpool Sch. of Arch.: Univ. of Liverpool), 12 Eaton Road, Cressington Park, Liverpool 19. Prof. L. B. Budden, Lt.-Col. Ernest Gee, Herbert Thearle.

Williams: Richard Hugh [Special Final], 53 Newport Road, Celtic Corridor, Cardiff. E. C. M. Willmott, Howard Williams, T. E. Smith.

Williamson: Donald Frank Armstrong, M.C. (The Poly., Regent Street, London: Sch. of Arch.), 162 London Road, High Wycombe, Bucks. E. A. L. Martyn, R. G. Brocklehurst, J. S. Walkden.

AS LICENTIATES (7)

Burke: Arthur Frederick, 65 Moorgate, E.C.2; 17 Loder Road, Preston Park, Brighton. S. C. Clark, S. J. Field, S. G. Jeeves.

Clark: Edwin Thomas, British Railways, L.M. Region, Central Offices, Euston Station, N.W.; 32 Valley Hill, Loughton, Essex. W. H. Hamlyn, Dr. J. L. Martin, Christopher Green.

Duley: Edward Alfred, c/o Prof. W. G. Holford [*F*], 1 Bank Buildings, Princes Street, E.C.2; Homefield Lodge, St. Stephen's Road, Ealing, W.13. Oliver Hill, Dr. Charles Holden, Prof. W. G. Holford.

Johnson: Clement Park, British Railways, L.M. Region, Architect's Office, Euston Station N.W.; Derwent, Felden Lane, Hemel Hempstead, Herts. W. H. Hamlyn, Dr. J. L. Martin, F. R. S. Yorke.

May: Reginald John, Architect's Branch, Personnel Dept., G.P.O., E.C.1; 7 Cambridge Road, Southend-on-Sea, Essex. Neil Martin-Kaye, Robert Cromie, H. W. Allardyce.

Singer: Oscar, 14 Wallace Court, N.W.1. C. A. Farey, Anthony Minoprio, C. G. Mant.

Wallace: John, c/o British Railways, L.M. Region, Euston Station, N.W.1; 9b Fairview Drive, Watford, Herts. W. H. Hamlyn, H. J. Davies, W. B. Stedman.

ELECTION: JULY 1949

An election of candidates for membership will take place in July 1949. The names and addresses of the overseas candidates, with the names of their proposers, are herewith published for the information of members. Notice of any objection or any other communication respecting them must be sent to the Secretary, R.I.B.A., not later than Saturday 25 June 1949.

The names following the applicant's address are those of his proposers.

AS FELLOWS (3)

Bloomfield: Frank I'Anson [*A* 1920], 23 Phillip Street, Sydney, N.S.W.; 48 Muston Street, Mosman, N.S.W. B. J. Waterhouse, Samuel Lipson, Norman Weekes.

Pastakia: Rustom Hormusji [*A* 1938], 42 Lakshmi Building, Sir Phirozshah Mehta Road, Bombay. L. H. Bucknell, Miss Ruth Ellis, R. F. Jordan.

and the following Licentiate, who has passed the qualifying Examination:

Causton: Thomas William, Architect's Dept., Nigerian Government, Lagos. Alexander Gray, W. L. Clarke, B. W. L. Gallannaugh.

AS ASSOCIATES (2)

The name of a school, or schools, after a candidate's name indicates the passing of a recognized course.

Hall: Reuter Louis Hallam (Passed a qualifying exam. approved by the R.A.I.A.), 11 City View Road, North Balwyn, Victoria, Australia. P. H. Meldrum, A. R. Butler, R. K. Stevenson.

Starkey: William John, B.Arch. (Passed a Qualifying exam. approved by the R.A.I.A.), 3 Glencarron Avenue, Mosman, N.S.W., Australia. J. C. Fowell, D. K. Turner, G. L. Moline.

AS LICENTIATE (1)

Barrett: Leslie Daniels, Ministry of Works, British Embassy, Cairo, Egypt; 18 Sharia Mansus Mahomed, Zamalek, Cairo. Sydney Loweth, Richard Mellor, and applying for nomination by the Council under Bye-law 3 (*d*).

Review of Films—9

The country of origin and date of release are given first. The film is in monochrome unless otherwise stated. The sizes (35 *mm. and* 16 *mm.*) *are given. Sound films are marked 'sd,', and silent 'st.' The running time is given in minutes.*
(F) indicates free distribution.
(H) indicates that a hiring fee is payable.

Taken for Granted
Britain 1947 (*F*)
Summary. The film deals with the main drainage of West Middlesex, showing the trade and domestic waste traversing a network of sewers, by gravitation and by pumping, on its way to the purification plant. Here the process of purification is shown from the time of entry to the point of discharge as pure water into the Thames. The process by which the sludge is first used to generate methane gas—on which the whole plant operates—and the process by which it is subsequently dried for use as a fertilizer are shown.
Appraisal. A good straightforward film which treats a potentially dreary subject in a really interesting way. The photography is good, and the timing of the commentary with the essential facts and figures as they appear on the screen is excellent. Good use is made of diagrams to indicate the relative position of the different plants, and enough facts are given to make the film interesting without overloading it with detail.
35 sd. 16 sd. 18 minutes. West Middlesex Main Drainage Works, Isleworth, Middlesex.

Mediæval Monastery
Britain 1948 (*H*)
Summary. The film opens with information about the different 'orders' which existed in mediæval times, and shows the distribution of the monasteries before the dissolution. The layout of a typical monastery is demonstrated, and shots are given of the Church, Chapter House, Refectory, etc. This is followed by a sequence illustrating a day in the life of a monk and the tasks of the lay-brothers are also shown.
Appraisal. This film is intended to take its place with others in a series entitled Mediæval Building for use in Schools under the subject heading of history. Film strips with teaching notes, and also wall charts, are available on the same subjects.

While it would give children a general idea of monastic life the treatment, which might have been interesting, is somewhat dull. Commentary and camera work are hardly inspired, though good use is made of diagrams at the beginning of the film. The continuity between the sections of the film dealing with the layout of the monastery, the life as lived in a monastery today, and the shots of monasteries, ruined and occupied, is unsatisfactory.
16 sd. 20 minutes. G.B. Film Library, Aintree Road, Perivale, Middlesex.

Members' Column

This column is reserved for notices of changes of address, partnership and partnerships vacant, or wanted, practices for sale or wanted, office accommodation, and personal notices other than of posts wanted as salaried assistants for which the Institute's Employment Register is maintained.

APPOINTMENTS

Mr. Marshall Bell [*A*], formerly Senior Assistant Architect with the City Architect, Newcastle-upon-Tyne, has taken up his new appointment as Deputy Director of Works to the City of Leeds Works Department, Sweet Street, Leeds 11, as from 1 February.

Mr. Gordon E. Carter [*A*] has been appointed Senior Planning Assistant to the Borough Architect and Planning Officer to the County Borough of West Ham. Mr. Carter's private address is 102, Tower Gardens Road, Tottenham, London, N.17.

Mr. Paul H. Connell [*A*] has resigned his position as Head of the Architectural Division of the National Building Research Institute, Pretoria, and has been appointed to the Chair of Architecture, University of Natal, at Durban, South Africa.

Mr. Henry Kendall, O.B.E. [*F*] has been appointed Government Town Planner, Uganda, and will be pleased to receive trade catalogues etc. on all matters of architecture and town planning, addressed to him in that capacity at Kampala, Uganda.

Mr. R. J. Killick [*L*], who has been appointed Chief Architectural Assistant in the Borough Engineer's Department of the Southall Borough Council, will be pleased to receive trade catalogues and technical data from development associations at the Town Hall, Southall, Middx. (Southall 2341.)

Mr. Basil R. Matthew [*L*] has been appointed Architect to the Executive Development Board, Lagos, Nigeria, W. Africa, and will be pleased to receive trade catalogues etc.

Mr. Gilbert Ray [*A*] has been appointed Deputy County Architect to the Pembrokeshire County Council.

Mr. James L. Kite [*L*], who has been appointed from 4 April 1949 Estate Architect to the Stanton Ironworks Co. Ltd., will be pleased to receive trade catalogues etc. especially those relating to farm buildings, at The Stanton Ironworks Co. Ltd., Sysonby Lodge, near Melton Mowbray, Leics. As from 26 March his address will be Flat No. 2, Sysonby Lodge, near Melton Mowbray.

PRACTICES AND PARTNERSHIPS

Mr. J. R. Anderson [*F*] is now in practice at York House (First Floor), Stanley Avenue, Salisbury, Southern Rhodesia, and will be pleased to receive trade catalogues etc.

Mr. Herbert J. Axten [*F*] has retired from the position of Architect to Westminster Bank Ltd. and is now practising at 9 Lake Avenue, Bromley, Kent. His former address was 51 Threadneedle Street, London, E.C.2.

Messrs. J. R. Bhalla and C. S. Thakore [*A*/*A*] have jointly commenced practice at Westminster House, Nairobi, Kenya Colony, and will be pleased to receive trade catalogues etc. at P.O. Box 110, Nairobi, Kenya Colony.

Mr. W. Colin Brown [*L*] and **Mr. Bernard Taylor** [*A*], formerly practising at 8 Jordangate, Macclesfield, have dissolved partnership by mutual consent. Mr. Brown has purchased the practice of the late J. H. Walters [*F*], at 19 Moody Street, Congleton, and will practise from that address. Mr. Taylor will continue to practise from Jordangate, Macclesfield.

Mr. J. Lovatt Davies [*A*] has taken into partnership **Mr. Duncan S. McNab,** B.Arch., M.R.A.I.C. They practise as Davies and McNab at 923 Denman Street, Vancouver, B.C.

Mr. Joseph G. Fogel [*A*] is now practising from 544 Kingsland Road, London, E.8 (CLIssold 5532), and will be pleased to receive trade catalogues etc.

The partnership between **Mr. Harry Gibberd** [*A*] and **Mr. B. T. Whiting** [*A*] has been dissolved by mutual consent. **Mr. Gibberd** will continue to practise from Theatre Royal Chambers, New Street, Birmingham 2 (Midland 1663), and **Mr. Whiting** will practise from 1 Fox Hill, Selly Oak, Birmingham 29 (Selly Oak 1448), where he will be pleased to receive trade catalogues etc.

The partnership between **Mr. Maurice William Jones** [*L*] and **Mr. Alexander Graham** [*A*] was dissolved as from 29 September 1947. The practice was purchased by **Mr. Alexander Graham** and since that date has been carried on solely by him. In future he will practise under his own name at the above address. **Mr. Maurice W. Jones** is continuing his ecclesiastical work only at the above address.

Mr. P. Middleton [*A*], who is teaching at the Nottingham School of Architecture, is now practising at 37 Park Street, Worksop, Notts, and will be pleased to receive trade catalogues etc.

Mrs. Elizabeth Grant Mortimer [*A*] has commenced practice at 62 North End, Northallerton (Tel. 164), and will be pleased to receive trade catalogues etc.

Mr. D. B. Peace [*A*], who is Chief Assistant Planning Officer to the Staffordshire County Council, will be pleased to receive trade catalogues and samples, particularly of external facing and roofing materials of all kinds, with a view to encouraging good design and the use of appropriate materials under the Town and Country Planning Act, 1947. His address is County Planning Office, 41a Eastgate Street, Stafford. Mr. Peace's private address is 23 Newport Road, Stafford (Stafford 1897).

Charles B. Pearson and Son (Charles E. Pearson [*F*]), of 18 Dalton Square, Lancaster, have opened an office in Manchester, which will be under the direction of **Mr. G. R. Lovell** [*A*]. The address is 24 Devonshire Street, Grosvenor Square, All Saints, Manchester 13, and Mr. Lovell will be pleased to receive trade catalogues etc.

As from 1 February 1949 **Mr. E. John Preece** [*A*] has entered into full partnership with **Mr. Gordon E. Payne,** O.B.E., F.R.I.C.S., M.T.P.I., at 19 Clarence Street, Gloucester, where they will carry on the practice formerly carried on as 'Gordon Payne and Partners' as Town Planning Consultants, Architects and Surveyors under the name of **Gordon Payne and Preece.**

Mr. Thomas W. Reid [*L*] has opened a practice from 1 March 1949 at 10 Reform Street, Dundee (Tel. 68597), and will be pleased to receive trade catalogues etc.

Mr. Ivor Shaw [*F*] and **Mr. S. John Lloyd** [*A*], who practise as **Shaw and Lloyd** at 74 Gt. Russell Street, London, W.C.1, are opening a branch of the firm in Israel, and Mr. Shaw will be leaving on 10 March and expects to be away two months. His temporary address will be c/o I.C.I. (Levant) Ltd., P.O.B. 1703, Tel-aviv, and he will be pleased to receive trade catalogues etc. there.

Mr. E. F. Starling [*A*] has opened an office at 12 Queen Anne's Gate, London, S.W.1 (WHItehall 0903). Trade catalogues etc. and enquiries should not be sent to this address but to his Croydon office, 3 Addiscombe Road, Croydon (Croydon 2241).

Mr. T. H. Thorpe [*F*] and **Mr. E. W. Pedley** [*F*], who have been practising as **T. H. Thorpe** [*F*] at 23 St. James's Street, Derby, have taken into partnership **Mr. G. I. Larkin** [*A*]. Mr. Thorpe is retiring from the practice, which will be carried on under the name of **T. H. Thorpe and Partners** from the same address.

Mr. Horace Williams [*A*], who has opened a private practice at Kitwe, Northern Rhodesia, will be pleased to receive trade catalogues etc. at P.O. Box 304, Kitwe, Northern Rhodesia.

CHANGES OF ADDRESS

Messrs. A. L. Gray and H. E. D. Adamson [*A*/*A*] removed from 2a Simpsons Road, Bromley, Kent, on 12 February to 53 Great Ormond Street, London, W.C.1 (CHAncery 7915).

Mr. H. M. H. Griffin [*A*] has moved from New Delhi, India, to the Public Works Department, Hargeisa, British Somaliland, East Africa.

Scherrer and Hicks [*F F*], of 310 Upper Regent Street, London, W.1, have moved from their office at 10 Dover Street, London, W.1, to 18 Harcourt House, 19 Cavendish Square, London, W.1 (MUSeum 1105/6), as from 25 February. The addresses of their other offices are 310 Upper Regent Street, W.1 (LANgham 4017 : 2788), and 50 George Street, Croydon (Croydon 4156/7/8).

Mr. John E. Macgregor, F.S.A. [*F*], has removed from 55 Great Ormond Street to 53 Great Ormond Street, London, W.C.1 (CHAncery 7915-6).

Mr. Anthony Tripe [*A*] has removed to 11 Duke Street, Manchester Square, London, W.1 (WELbeck 3995-6-7).

PRACTICES AND PARTNERSHIPS WANTED AND AVAILABLE

Fellow (39) in London practice since 1935 and with good volume of work on hand wishes to contact member with an established practice who seeks partnership. Box 26, c/o Secretary, R.I.B.A.

Partner required, with capital for progressive practice in East Anglia. Box 24, c/o Secretary, R.I.B.A.

Two members desiring to enter into partnership wish to purchase the whole, or part of, an established provincial practice. Box 23, c/o Secretary, R.I.B.A.

Well-established small general practice in a Thames Valley township for sale. 13 miles from London. Box 19, c/o Secretary, R.I.B.A.

WANTED AND FOR SALE

Magazine set of instruments in a walnut case by Pillischer (not quite complete) for sale. Inventory of contents on application. £30 or near offer. Box 23, c/o Secretary, R.I.B.A.

For sale. *Civic Art*, by Hegemann and Peets; *City Planning Housing*, Vol. III, by Hegemann. Offers to Box 28, c/o Secretary, R.I.B.A.

For sale. Printing plant, comprising glazed oak frame, 57 x 33 in. overall, three 400-watt mercury vapour discharge lamps in 18-in. diameter, enamelled steel reflectors complete with switchgear, chokes and condensers and wooden framing for enclosure, developing roller suitable for Dyeline, etc., processes. Offers MUSeum 7165, Norman and Dawbarn, 5 Gower Street, London, W.C.1.

For sale. *The Information Book* of Sir John Burnet Tait and Lorne and Vols. 1, 2, 3 and 4 of *The Architects' Journal Library of Planned Information*. Offers to Box 18, c/o Secretary, R.I.B.A.

ACCOMMODATION

Architects have excellent accommodation off Strand available with telephones and switchboard. Would consider limited partnership, staff sharing, or amalgamation for specific jobs. Might suit Quantity Surveyors, Engineers and allied professions. Box 25, c/o Secretary, R.I.B.A.

Associate seeks office accommodation, one or two rooms with telephone. Inns of Court or Bloomsbury district preferred. Able to give part-time assistance if required. Box 22, c/o Secretary, R.I.B.A.

Young Associate requires small office in Birmingham, preferably with telephone or use thereof. Must be moderate rent. Box 21, c/o Secretary, R.I.B.A.

Wanted from July next, office accommodation for two partners, secretary and drawing office of five. Holborn area preferred. Box 27, c/o Secretary, R.I.B.A.

"A.B.S"

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